THE BUILDER

A RECORD OF ARCHITECTURE & CONSTRUCTION

JAN 10 1921

VOLUME CXIX. No. 4064. Seventy-eighth Year.

FRIDAY, DECEMBER 24, 1920. REGISTERED AT THE GENERAL POST OFFICE AS A NEWSPAPER

PRICE NINEPENCE. By Post 11d. (This Week.)

HOBBS, HART, & CO.'S

SAFES
SAFES
SAFES
SAFES
SAFES
SAFES

ARE THE BEST.

76, CHEAPSIDE, E.C.2.

VAN KANNEL

REVOLVING DOOR CO., LIMITED.

FIRST IN 1899 | FOREMOST IN 1920

ONLY ADDRESS:

WATFORD, ENGLAND

HARDWOOD FACTORY BLOCK FLOORING AND PARQUET FLOORS.

Specialité—COLONIAL WOODS.

DAMMAN & CO., LTD.,

137, PARK RD., ST. JOHN'S WOOD, N.W. 8

HYDRAULIC LIFTS. NO FIRE RISKS.

LONDON HYDRAULIC POWER CO.

HATFIELD STREET, S.E.1. HOP. 4540.

THE LIFT & HOIST Co.

Sole Makers of "Premier" Rolling Shutters.

108-114, Prince Street, DEPTFORD, S.E.

WAYGOOD-OTIS LIFTS

Offices:—54-5, Fetter-lane, E.C.4 (T.N.: Holborn 2001, T.A.: "Waygood, Fleet, London"); 62-3, Lionel-street, Birmingham (T.N.: Cen. 40 Birmingham, T.A.: "Waygood, Birmingham"). Works: Falmouth-road, London, S.E.1.

TITAN LIFTS.

THE TITAN LIFT CO., Ltd.,

20, HIGH HOLBORN, W.C. Telephone—4687 HOLBORN

ELECTRIC LIFTS

Smith, Major, & Stevens, Ltd. LONDON & NORTHAMPTON.

(Late Archibald Smith & Stevens).

HASKINS LIFTS

for domestic purposes—hand power.

Saml. Haskins & Bros., Ltd 20-34 Old St. London, E.C.1.

THE EXPRESS LIFT CO., LD.

GREYCOAT STREET WORKS, WESTMINSTER S.W.1

ALL TYPES.

'Phone: Victoria 6115 (3 lines).

EWART'S "EMPEROR" SMOKE CURE

Cures Smoky Chimneys.

Catalogue on application.

EWART & SON, Ltd., Euston Rd., London.

LIFTS REVOLVING SHUTTERS COLLAPSIBLE GATES.

DENNISON, KETT & CO., LTD.

Tel.: Bank 8356. 11, QUEEN VICTORIA ST., E.C.

GIMSON LIFTS

GIMSON & Co. (LEICESTER), Ltd.

Phone 6. Vulcan Works, LEICESTER.

SIMPLEX LEAD GLAZING

FOR ROOFS, SKYLIGHTS & HORTICULTURAL WORK.

NO ZINC, IRON OR PUTTY USED.

No Special Contract Required.

GROVER & Co., Ltd.

BRITANNIA ENGINEERING WORKS, CARPENTERS ROAD, STRATFORD, E15

"CONCRETE AND CONSTRUCTIONAL ENGINEERING." 1/6 Monthly.

ANNUAL SUBSCRIPTION, 21/-

Publishing Office: 4, Catherine Street, W.C.2

TRADE NOBLES & HOARE LONDON NH MARK VARNISH *Nobles & Hoare* ENAMEL TRADE NOBLES & HOARE LONDON NH MARK

MILD STEEL ROUNDS FOR FERRO-CONCRETE

ALL SIZES.

BARS BARS BARS

PROMPT DELIVERIES FROM STOCK.

HELICAL BAR CO., 1, VICTORIA STREET, WESTMINSTER, S.W.1 Victoria 1940 & 1941.

"I have seen several different forms of Mr. Boyle's 'Air-Pump' Ventilator in actual operation, and have much pleasure in testifying to their efficiency."—LORD KELVIN.

Boyle's

LATEST "PATENT" AIR-PUMP" VENTILATOR.

Has DOUBLE the EXTRACTING POWER of Earlier Forms

Awarded the £50 Prize with Grand Diploma (only prize offered), at the International Ventilator Competition, London. Highest Award, International Ventilator Competition, Paris, Two Gold Medals.

"Mr. Boyle's complete success in securing the required continuous upward impulse is testified to by high authorities."—GOVERNMENT REPORT (Blue Book).

ROBERT BOYLE & SON,

Ventilating Engineers.

64, HOLBORN VIADUCT, LONDON.

"Messrs. Robert Boyle and Son, as the founders of the profession of Ventilation Engineering, have raised the subject to the dignity of a science."—REPORT ON THE VENTILATION OF THE LONDON CUSTOM HOUSE.

'CROID' LIQUID GLUE

Croid was used throughout in Aeroplane Construction, and is now extensively used for JOINERY, Veneering, Distempering.

Write to-day for full particulars and trade terms.

Improved Liquid Glues Co., Ltd., Wapping, London, E.1. Also at Glasgow.

MODELS OF WORKS BUILDINGS ESTATES, etc.

Executed by JOHN B. THORP,

98, Gray's Inn Road (next to Holborn Hall),

Phone Holborn. 1011 LONDON, W.C. 1

HEATING

ROSSER & RUSSELL, Ltd.

(MAYFAIR 5210)

37 DUKE STREET, OXFORD STREET, LONDON, W.1

MIXERS

For CONCRETE or TAR MACADAM

Mechanical Sand Dryers

Tar-Spraying Machines

THOMAS COLEMAN & SONS, LTD., ALFRETON ROAD, DERBY.

Analysis of Advertisements.

Artificial Stone—
Brookes Ltd.
Concrete Units Co.
Patent Impervious Stone

Asbestos Tiles & Sheets—
Bell's United Asbestos Co.
British Everite & Asbestilite Works, Ltd.
British Fibrocement Works.
British Roofing Co., Ltd.
British Uralite Co. (1908) Ltd.
Machin & Kingsley, Ltd.
Martinet Slate & Sheet Co., Ltd.
Sankey, J. H. & Son, Ltd.
Speaker, G. R. & Co.
Turner Bros' Asbestos Co., Ltd.

Asphalte—
Bradshaw's Asphalte Co. Ltd.
Bradshaw, J. H.
Ekert & Rolfe Ltd.
Faldo's
Holman, A. C. W. & Co. Ltd.
Limmer & Trinidad Lake Co.
Ragusa Asphalte Co. Ltd.
Val de Travers Asphalte Co.

Baths, &c.—
Carr, Chas. Ltd.
Gillett & Johnston

Bituman Sheeting—
Callender, Geo. M. & Co. Ltd.
Engert & Rolfe, Ltd.
McNeill, F. & Co. Ltd.
Vulcanite Ltd.
Wallis Dove Bitumastic, Ltd.

Blind Cords—
Anchor Brand.
Woods Sons & Co.

Blinds (Window, &c.)—
Bryden, John, & Sons
Francis, S. W. & Co. Ltd.
Haskins, S. & Bros.
Meighan, James & Son
Williams G. A. & Son

Boilers—
Danks, H. & T. (Netherton).
Hartley & Sugden, Ltd.
Jenkins, Robert, & Co., Ltd.
Kinnell Chas. P. & Co. Ltd.
Lumbys, Ltd.

Bricks—
Builders' Material Association
Burley, C. Ltd.
Dennis, Henry
Lawford & Sons, Ltd.
Leeds Fireclay Co. Ltd.
Moler Fireproof Brick Co.
Ravenhead Pipe & Brick Co. Ltd
Rufford & Co.
Sankey, J. H. & Son, Ltd.
Smeed, Dean & Co. Ltd.
Ward, R. G. & Co.
Young & Son

Builders' Ironmongery—
Nicholls & Clarke
O'Brien, Thomas & Co.
Shaw & Carter, Ltd.
Young & Marten Ltd.

Building Contractors—
Chessums, Ltd.
Higgs & Hill, Ltd.
Jones, Walter & Sons
Somerville, D. G. & Co. Ltd.
Williams Howell J. Ltd.

Cartage Contractors—
Bissell, J. A.
Earley
Mears, Joseph

Castings—
Bayliss, Jones & Bayliss, Ltd.
Haywards, Ltd.
Macfarlane, W. & Co.
Nicholls & Clarke, Ltd.
Young & Marten, Ltd.

Cement, Lime, Plaster—
Builders' Material Association
Burley, C. Ltd.
Cement Marketing Co
Greaves, Bull & Lakin, Ltd
Kaye & Co. Ltd.
Lawford & Sons, Ltd
Oxford Portland Cement Co.
Sankey, J. H. & Son, Ltd.
Smeed, Dean & Co. Ltd.
Super Cement, Ltd.
Young & Son

Cement Waterproofing—
Bareau
Ironite Co., Ltd.
Pudlo
Pruft

Clocks (Church & Tower)—
Gillett & Johnston

Chimney Shafts—
Chimneys Limited.
Danks, H. & T. (Netherton) Ltd
Furse, W. J.

Chimney Cowls, &c.—
Ewart & Son, Ltd.
Farmiloe, George & Sons, Ltd
Nicholls & Clarke, Ltd.
Young & Marten Ltd

Concrete Houses—
Bremners,
Concrete Units Co.
Roberts A. Co. Ltd.

Concrete Machinery—
Australia Pat. Concrete Block
Builders and Contractors Plant, Ltd.
Chalmers-Edina Co.
Ingersoll-Rand Co.
Liner Concrete Machinery Co.
Martin-Harvey Co
Millars' Timber & Trading Co
Parker, Winder & Achurch Ltd.
Price & Co., Frank G.
Stothert & Pitt
Vickers, Ltd.
Whitaker, R. G., Ltd.
Winnet, Limited

Coatostone—
Coatostone Decoration Co

Concrete Piling—
Simplex Concrete Piles, Ltd
Somerville D. G. & Co. Ltd.

Concrete Specialities—
British Construction Co.
Building Products, Ltd.
Concrete Blocks, Ltd.
Concrete Units Co.
Relical Bar & Engineering Co.

Concrete (Reinforced)—
British Reinforced Concrete
Concrete Units Co.
Expanded Metal Co., Ltd.
Hoist & Co.
Improved Concrete Construction Co. Ltd.
Indented Bar & C. Eng. Co.
Johnson's Reinforced Concrete
Jones, Walter & Sons
Lind, Peter & Co.
Patent Impervious Stone Co.
Self-Centering Ex. Metal.
Somerville, D. G. & Co., Ltd.
Stewart, J. & W.
Trussed Concrete Steel Co., Ltd
Walker-Weston Co. Ltd.

Contractors' Plant—
Anderson, Thomas & Co., Ld
Boyer, Henry
Builders and Contractors Plant, Ltd.
Builders' Material Association
Building Products, Ltd.
Cayless Bros. (Battersea)
Lewis & Lewis Ltd.
Palmer's Travelling Cradle
Parker, F. & Co.
Rom River Co., Ltd.
Stephen & Carter Ltd

Damp Proof Courses—
Briggs, W., & Sons Ltd.
Building Products, Ltd.
Callender, Geo. M. & Co. Ltd.
Engert & Rolfe, Ltd.
Holman, A. C. W. & Co. Ltd.
Ironite Co. Ltd. (The)
Kerner-Greenwood & Co. (Pudlo)
McNeill F. & Co Ltd
New Tylerybont Stone and Asphalte Co., Ltd.
Permanite, Ltd.
Ragusa Asphalte Co. Ltd.
Rowse & Co.
Titon (Liverpool) Ltd.
Vulcanite Ltd

Decorators' Dust Sheets—
Moore, W. & Co.

Demolition—
Boyer, Henry
Cowell, A. E. & Co.
Greenham, Henry J.

Doors (Iron, Steel, &c.)—
Anderson, Thomas & Co., Ld
Brown, R., Ltd.
Bryce, White & Co.
Dennison, Kett, & Co. Ltd
Gibson, Arthur L.
Haywards, Ltd.
Hobbs, Hart, & Co. Ltd.
Lift and Hoist Co
Mather & Platt, Ltd.
Stavers & Robinson.
Van Kannel Revolving Door Co
Wadeson & Co.

Door Hangers & Rollers—
Bousfield's Ironworks.
Nicholls & Clarke, Ltd.
O'Brien, Thomas, & Co.
Parker, Winder & Achurch
Young & Marten Ltd

Door Springs and Hinges—
Nicholls & Clarke, Ltd.
Young & Marten Ltd

Drawing Instruments—
Baker C.
Clarkson's.

Electric Lamps—
Mazda. Osram.

Electric Lighting & Fittings—
Dalarn Engineering Co.
General Electric Co., Ltd.
Harrison & Co.
Malcolm & Allan, Ltd.
Mather & Platt, Ltd
Sims & Sims
Tilley Bros.
Tredegars Ltd
Troy & Co. Ltd.
Underwood (Manchester), Ltd.

Engines, Mortar Mills—
Lewis & Lewis, Ltd.

Facias, &c.—
Francis, S. W. & Co. Ltd.
Haskins, S., & Bros., Ltd.

Felt—
Anderson, D. & Son, Ltd.
Engert & Rolfe, Ltd.
Gibson, Arthur L.
McNeill F. & Co. Ltd.
Sankey, J. H. & Son, Ltd.
Titon (Liverpool) Ltd.

Fencing (Wood, &c.)—
Ford, H. J.
"Invicta" Fencing Co.
Neville Hine & Co.
Rowland Bros.

Fibre for Mixing—
Woods, Sons and Co

Fire Escapes, Staircases—
Clark, Hunt, & Co. Ltd.
Davis, H. & C. & Co. Ltd.
Haywards, Ltd.
Lift and Hoist Co

Fireproof Flooring, &c.—
Bell's United Asbestos Co.
British Reinforced Concrete
Dawnay, A. D. & Sons, Ltd.
Expanded Metal Co. Ltd.
Haywards, Ltd.
Homan & Rodgers, Ltd.
Ironite Co. Ltd.
King, J. A. & Co.
Kleine Pat. Flooring Co. Ltd.
Moler Fireproof Brick & Partition Co., Ltd.
Siegwart Fireproof Floor Co.
Somerville D. G. & Co. Ltd.
Thermos Flooring Co. Ltd

Flint Paper—
Oakey, J. & Sons, Ltd.

Folding Partitions—
Educational Supply Assoc., Ltd.
Lift and Hoist Co.
Thornborough & Co. Ltd.

Garden Hose—
Wilcox, W. H. & Co. Ltd.
Woods, Sons & Co.

Gates (Collapsible)—
Acme Metal Works
Bostwick Gate Co., Ltd.
Dennison, Kett, & Co. Ltd.
Haywards, Ltd.
Lift and Hoist Co
Thornborough & Co. Ltd.

Gates, Railings (Iron), &c.—
Bayliss, Jones & Bayliss, Ltd.
Haywards, Ltd.
Nicholls & Clarke Ltd.
Young & Marten, Ltd.

Glue (Liquid)—
Croid
Gluton, Ltd.
Pactol

Glue (Powder)—
Lactocol

Glass (Plate & Window)—
British Luxfer Prism Synd.
Clark J. & Son. Ltd.
Eaton, Parr & Gibson, Ltd.
Farmiloe, George & Sons, Ltd
Haywards, Ltd.
King, J. A. & Co
Newton, J. M. & Sons, Ltd.
Nicholls & Clarke.
Pilkington Bros., Ltd.
Van Sint Jan, Sylvain.
Young & Marten Ltd.

Glass Paper—
Oakey J. & Sons. Ltd

Glass (Stained, Painted)—
British Luxfer Synd., Ltd.
Farmiloe, George & Sons. Ltd
Freeman s
Grover & Co. Ltd.
Haywards, Ltd.
Helliwell & Co. Ltd.
King, J. A. & Co.
"Metacon" Patent Glazing
Nicholls & Clarke, Ltd.
Partridge, T. & Co.
Wotton & Son
Young & Marten, Ltd

Gutter Brackets—
Parker Winder & Achurch

Heating and Lighting—
Central London Electrical
Clark, Hunt, & Co., Ltd.
Dunham Co., Ltd., C. A.
Ewart & Son, Ltd.
Hartley & Sugden Ltd.
Haywards, Ltd.
King & Co., Ltd.
Kinnell Chas. P. & Co., Ltd
Martin, W. C. & Co.
Messenger & Co.
Murray, S. D. & Co., Ltd.
Musgrave & Co. Ltd.
Nicholls & Clarke, Ltd.
Rosser & Russell Ltd.
Self Engineering Co., Ltd.
Spensers, Ltd.
Walker, H. & Son, Ltd.
Young & Marten Ltd

Hot Water Supply—
Clark, Hunt & Co. Ltd.
Dargue, Griffiths & Co., Ltd.
Ewart & Son, Ltd.
Fildes, Thos.
Jenkins, Robert & Co. Ltd.
Keith, James, & Blackman
Martin Engineering Co., Ltd.
Murray, S. D. & Co., Ltd
Potter-ton, Thos.
Rosser & Russell, Ltd.

Hydraulic Power—
London Hydraulic Power Co.

Insurance—
Cornhill Insce. Co., Ltd.
London and Lancashire Fire
Timber Trades Mutual Accident

Ironite—
Ironite Co. Ltd.

Joinery, Mouldings, &c.—
Aston Grant & Co., Ltd.
Austins (East Ham & Ilford)
Baltic Saw Mills Co., Ltd.
Boulton & Paul, Ltd.
Bowman, M.
Cabinet Co. (S. L.), Ltd.
Central Aircraft Co.
Easton & Co., A. J.
Falcon Works, Ltd.
Foulds, Arthur, Ltd.
Gluton Ltd.
Gosport Cabinet & Joinery Works.
Henry, George & Co.
Heal & Son
Hobbs, W. J.
Holt, J. & Sons.
Jennings, C. & Co.
Middlesex Joinery Works Ltd.
Newman, John, Ltd.
Ogilvie & Co.
Orfeur, C. H. Ltd.
Peacock, Chas. & Co.
Roach, E.
Slade, Geo. & Co., Ltd.
Thornborough & Co. Ltd.
Tucker, W. Duncan, & Sons
Wallis, John & Co.
West Heath Joinery Works.
West London Timber & Moulding Co. Ltd.

Jointless Flooring—
Bell's United Asbestos Co.
Brentford Construction Co.
British Dolomen Co. Ltd
Darsto
Ebner, J. F.
King, J. A. & Co.
Thermos Flooring Co. Ltd.
Walker, Chas. & Co.
Wilfley Co. Ltd.

Ladders—
Acme Patent Ladder Co.
Cayless Brothers (Battersea
Drew, Clark & Co.
Finch, M. & Son
Lawford & Sons, Ltd.
Parker & Co.
Stephens & Carter
Stephens & Stephens
Trollope & Colls, Ltd.

Laundry Appliances—
Bradford, T. & Co. Ltd

Letters, &c.—
Francis S. W. & Co Ltd

Lead, Oil, Colours, Size, &c—
Builders' Material Association
Farmiloe, G. & Sons, Ltd.
Farmiloe, T. & W. Ltd.
Girdler, J. & Co.
Nicholls & Clarke
Sankey, J. H. & Son, Ltd.
Titon (Liverpool) Ltd.
Young & Marten, Ltd.

Lifts, Hoists, Cranes &c.—
A. & A. Electrical Co. Ltd.
Bryden John, & Sons
Dennison, Kett & Co., Ltd
Express Lift Co., Ltd.
Haskins, S. & Bros. Ltd.
Hoisting Appliance Co.
Lewis & Lewis, Ltd.
Lifts and Hoist Co.
Smith, Major & Steven, Ltd.
Steven, A. & P.
Titan Lift Co. Ltd.
Vaughan Crane Co., Ltd.
Waygood-Otis Ltd.

Lightning Conductors—
Aldington, G.
Furse W. J

Locks, Latches, &c.—
Hobbs, Hart & Co. Ltd
Nicholls & Clarke, Ltd
Young & Marten Ltd.

Machinery—
Johnson C. H. & Sons Ltd

Marble—
Bomert, Teves and Blankley
Ebner, J. F.
Kelly & Co
Manu-Marble Co.
Moore, M. & R.
Walker, Chas. & Co.
Webb, Percy C., Ltd.

Metal Casements—
British Luxfer Syndicate, Ltd.
Etherton & Williams,
Farmiloe, George & Sons Ltd
Haywards, Ltd.
Nicholls & Clarke Ltd
Standard Metal Windows Co.
Young & Marten, Ltd.

Metal Work—
Marshall, R. E. & C, Ltd.
Shrivell, Wm., Ltd.
Tilley Bros.
Thornborough & Co., Ltd

Model Makers—
Partridge, L. H.
Thorp, J. B.

Mosaic Work—
Brookes, Ltd.
Ebner, J. F.
Jackson, Geo F.
Maw & Co. Ltd.
Moore, M. & R.

Motor Vehicles, Transport—
Birch Bros.
Bunford & Co., Ltd.
Commercial Cars Ltd.
Keith & Boyle (Edin.), Ltd.
London & Midland Motors, Ld
Mann's Pat. Steam Cart and Wagon Co.
North Western Motors
Palladium Autocars, Ltd.
Slough Trading Co., Ltd.
Thornycroft & Co.
Tilling, Ltd.
Tuke & Bell, Ltd.

Paints, Stains, Varnish—
Aspinalls, Ltd.
Berger, Lewis, & Sons, Ltd.
Builders' Material Association
Carson, W. & Sons
Clark, Robt. Ingham & Co. Ltd
Cuirass Products, Ltd.
Dixon's White, Ltd.
Farmiloe, George & Sons, Ltd.
Farmiloe, T. & W. Ltd.
Gay R. & Co., Ltd
Gelatinous White Co.
Hall, John & Sons, Ltd.
Nicholls & Clarke, Ltd.
Nobles & Hoare, Ltd.
Prices' Company, Ltd.
Rose, Sir A. W. & Co., Ltd.
Silicate Paint Co.
Stephens, H. C.
Titon (Liverpool) Ltd.
Torbay & Dart Paint Co. Ltd.
Young & Marten Ltd.

Parquet Flooring—
Artistic Flooring and Decorating Co
Dauman & Co.
Ebner, J. F.
Turpin's
Walker, Chas. & Co.

Partitions, Slabs, &c.—
British Lignolite Co.
British Uralite Co. (1908)
Builders' Material Association
Concrete Blocks, Ltd.
Concrete Units Co.
Educational Supply Co. Ltd.
Expanded Metal Co. Ltd.
Jones, Fredk. & Co. Ltd.
King, J. A. & Co.
Lawford & Sons, Ltd.
Murribloc (Partition Slabs), Ltd.
Thames Mills (Calne).
Wright, J. & Co.

Pavement, &c., Lights—
British Luxfer Prism Synd.,
Haywards, Ltd.
King, J. A. & Co

Picture Cords—
Anchor Brand
Woods, Sons & Co

Pipe Yarns—
Woods, Sons & Co.

Pumps, Pumping Engines—
Barclay, James
Boulton & Paul, Ltd.
Braby, F. & Co., Ltd
Phœnix Engineering Co Ltd.
Pulsometer Engineering Co
Willcox W H. & Co Ltd.

Rawlplugs—
Rawlplug Co.

Rooflights—
Braby, F. & Co. Ltd.
British Luxfer Prism Synd
Rendle, W. Edgcumbe & Co. Ltd

Roofing Compounds—
Baxendale & Co., Ltd., "Texo,"
Callender, Geo. M. & Co., Ltd.
Cuirass Products
"Farotex."
Titon (Liverpool), Ltd
Reparo, Ltd.

Roofing (Felt)—
British Roofing Co. Ltd.
Certain-teed Products
Cuirass Products, Ltd.
McNeill F. & Co. Ltd.
New Tylerybont Stone and Asphalte Co., Ltd.
Vulcanite Ltd.

Roofings (various brands)—
"Alligator" (British Roofing Co. Ltd.)
Certain-teed Products
"Challenge" (Briggs & Sons)
"Lion" (F. McNeill & Co.)
National Roofing, Ltd.
"Rok" (D. Anderson & Son, Ld
"Ruberoid" (Ruberoid Co. Ld)
"Tison," Titon Ltd.
"Vulcanite" (Vulcanite Ltd).

Roofs (Zinc and Copper)—
Braby, F. & Co. Ltd.
Ewart & Son, Ltd.

Ropes (Fall and Scaffold)—
Brown, J. H. & Co.
Bullivant & Co., Ltd.
Leyton Rope Works
Woods, Sons & Co.

Safes—
Hobbs, Hart, & Co. Ltd.
Tann John Ltd.

Sand, Gravel, &c.—
Bennett, John
Boyer Henry
Concrete Units Co.
Hoddesdon Sand Pits, Ltd.
Lawford & Sons, Ltd.
Stanwell Silica Co., Ltd.
Stokes, J. W. G.

Sanitary Appliances and Ware—
Andrew & Nanson
Builders' Material Association
Burn Bros.
Doulton & Co. Ltd.
Emanuel, A. & Sons, Ltd.
Farmiloe, George & Sons Ltd
Haywards, Ltd.
Leeds Fireclay Co. Ltd
Macfarlane, W. & Co.
Nicholls & Clarke
Rufford & Co
Sankey, J. H. & Son, Ltd.
Sessions & Sons, Ltd.
Thames Bank Iron Co, Ltd.
Young & Marten Ltd

Sash Lines, Cords, &c.—
Anchor Brand
Brown, J. H.
Woods, Sons & Co.

Scaffolding—
Hobbs, W. J.
Humphries Patent Bracket
Lawford & Sons, Ltd
Palmer's Travelling Cradle
Parker, F. & Co.
Patent Rapid Scaffold Tie Co.
Spencer's Travelling Scaffold,
Stephens & Carter
Tubular Scaffolding Co.

Scrap Metals—
Buyers of Scrap Metals Ltd.

Settings for Boilers, &c.—
Aldington, G.
Danks, H. & T. (Netherton) Ltd.

Sculptors—
Powis & Graham

Sewage Purification—
Tuke & Bell Ltd.

Shop Fronts (Metal & Wood)—
Francis, S. W. & Co. Ltd.
Haskins, S. & Bros. Ltd.
Jones, Stanley & Co.
Sage, Fredk. & Co., Ltd.

Shutters—
Dennison, Kett, & Co.
Francis, S. W. & Co. Ltd.
Gibson, Arthur L.
Haskins, S. & Bros. Ltd.
Lift & Hoist Co.
Thernborough & Co. Ltd.

Silicate Cotton—
Jones, Fredk. & Co. Ltd.
McNeill F. & Co. Ltd.

Slag Wool—
Jones, Fredk. & Co. Ltd.
McNeill F. & Co. Ltd.

Slates—
Builders' Material Association
Hobson, W. D.
Lamb, W. T. & Sons
Lawford & Sons, Ltd
Sankey, J. H. & Son, Ltd.
Sessions & Sons Ltd.

Slating Contractors—
Eldridge, J. J. Junr., Ltd.
Macquire, John

Sprinklers (Automatic)—
Mather & Platt Ltd.

Stable, &c., Fittings—
Bayliss, Jones & Bayliss, Ltd
Haywards, Ltd.
Musgrave & Co. Ltd.
Nicholls & Clarke, Ltd.
Young & Marten, Ltd.

Stair Treads—
Safety Tread Syndicate, Ltd.

Staircases, Verandahs, &c—
Art Metal Construction, Ltd.
Carron Company
Davis, H. & C. & Co.
Haywards Ltd

Steam Cleaning—
Steam Cleaning Corporation

Steel Fittings—
Art Metal Construction Co.
Crittall Mfg. Co., Ltd.
Grovesend Steel Ceiling Co.

Steel Joists—
Dunlop & Ranken, Ltd.

Stone Restoration—
The Stone Preservation Co., Ltd

Stone—
Bath & Portland Stone, Ltd
Johnson, S. & Son

Strong Rooms—
Hobbs, Hart, & Co Ltd
Tann John Ltd

Stoves, Ranges, Mantels—
Carron Company
City Iron Co.
Clark, Hunt & Co., Ltd.
Hartley & Sugden, Ltd.
Interoven Stove Co. Ltd.
Lumbys, Ltd.
Nicholls & Clarke, Ltd.
Musgrave & Co., Ltd.
National Radiator Co., Ltd
Parkinson Stove Co.
Potterton Thos
Richmond Gas Stove Co. Ltd.
Self Engineering Co., Ltd.
Sessions, J. & Sons
Smith, S. & Sons, Ltd.
Stimex Gas Stove Co.
Wright, Geo. Ltd
Young & Marten Ltd.

Structural Iron and Steel—
Braby, F. & Co. Ltd.
Braithwaite & Co.
Clark, Hunt & Co. Ltd.
Davis, H. & C. & Co
Dawnay A. D. & Sons Ltd.
Fleming, P. & E. & Co.
Freeman's
Haywards, Ltd.
Henderson & Glass
King & Co., Ltd.
Measures Bros. (1911), Ltd.
Partridge, T. & Co.
Power's & Deane, Ransome's Ld
Shaw M. T. & Co.
Trussed Concrete Steel Co. Ltd.
Wild, James & Co.

Suction Cleaning—
Sturtevant Engineering Co. Ld.

Surveying Instruments—
C. Baker
Clarkson's

Tanks, Cisterns &c.—
Braby, F. & Co.
Builders' Material Association
Butterfield, W. P., Ltd.
Farmiloe, George & Sons, Ltd
London Galvanised Iron Co Ltd
Mather & Platt, Ltd.
National Galvanisers Ltd.
Nicholls & Clarke, Ltd.
Shaw, M. T. & Co.
Young & Marten Ltd.

Tar (all kinds)—
Woods, Sons & Co.

Tar Boilers—
Phœnix Engineering Co. Ltd

Terra Cotta—
Dennis, Henry
Hathern Station Brick Co., Ld.
Leeds Fireclay Co. Ltd.

Tiles—
Bomert, Teves and Blankley
Cope & Co
Dennis, Henry
Hodge, F., Ltd.,
Leeds Fireclay Co. Ltd.
Manu-Marble Co., Ltd.
Maw & Co., Ltd.
Minton Hollins & Co. Ltd.
Sankey, J. H. & Son, Ltd.
Walker, Chas. & Co.
White, Child & Beney, Ltd.
Wire, A. D. Ltd.

Timber—
Aston Grant & Co., Ltd.
Brown, H., Limited
Calder & McDougall, Ltd.
Ford, H. J.
Gliksten & Son, Ltd.
Hall, L.
Jennings, C. & Co.
Leary, C. & Co.
Longbotham, J. & Co.
Longhurst, E. & Sons
Millar's Timber & Trading Co
Price & Low, Ltd
Priday, S.
Venesta, Ltd.

Tyres—
Bergougnan Tyre Co.
Dunlop Rubber Co. Ltd.
Michelin
North British Rubber Co.
Palatine

Underlining, &c.—
Engert & Rolfe Ltd.
McNeill, F. & Co. Ltd
Vulcanite, Ltd.
Willesden Paper & Canvas Wks.

Ventilating—
Boyle, R. & Son
Dargue, Griffiths & Co., Ltd.
Ewart & Son, Ltd.
Haywards, Ltd.
Keith & Blackman Co.
Kinnell, Chas P. & Co., Ltd.
Murray, S. D. & Co., Ltd.
Rosser & Russell, Ltd.
Sturtevant Engineering Co. Ld

Wall & Ceiling Coverings—
Beaver Board Co., Ltd
Fiberlic
Machin & Kingsley, Ltd.
Manu-Marble Co., Ltd.
O'Brien, Thomas & Co.
Thames Mills
Venesta, Ltd.
Young & Marten Ltd

Waterproofing—
Adamite & Co., Ltd.
Building Products, Ltd.
Callender, G. M. & Co.
"Cure-o" Co.
Ebner, J. F.
Kerner-Greenwood & Co. (Pudlo)
Super Cement, Ltd.
Titon (Liverpool) Ltd.
Torbay & Dart Paint Co.

Wine Bins (Iron)—
Bayliss, Jones & Bayliss, Ltd.
Farrow & Jackson

Wire Screens—
Duke, Waring, Crisp & Co.
Johnson Clapham & Morris, Ld
Moriarty & Co. (1911) Ltd.
Parker, Winder & Achurch

Window Frames & Sashes—
Braby, F. & Co. Ltd.
Carron Company
Clark, Hunt, & Co. Ltd.
Crittall Mfg. Co., Ltd.
Hayter, Ltd.
Haywards, Ltd.
Williams & Williams, Ltd.

Wood Flooring—
Acme Flooring and Paving Co.
Ebner, J. F.
Homan & Rodgers, Ltd.
Improved Wood Pavement Co.
Turpin's
Zeta Wood Flooring Co.

Wood Preservative—
Fuller, John H. & Co. Ltd.
Maclean Wm. Sons, & Co.
Major & Co., Ltd.
Reparo, Ltd.
Sterns, Ltd.

THE BUILDER

A RECORD OF ARCHITECTURE AND CONSTRUCTION.

WITH WHICH IS INCORPORATED THE "BRITISH ARCHITECT."

VOL. CXIX.—No. 4034. DECEMBER 24, 1920.

THE POLICY OF THE BRITISH INSTITUTE OF INDUSTRIAL ART.

TO do justice to the Exhibition of Books and Printing arranged by the British Institute of Industrial Art, requires that we should first of all understand its intention. On looking round an exhibition composed of posters, type printing and books only, with many of which he is already familiar, the visitor will not find anything in it either very arresting or new. But if he will take the trouble to be a citizen as well as a pleasure-seeker, this is an Exhibition with which he is very much concerned. We have come down from the heights and away from the stale and rather sentimental outlook which hid the facts from us, and shall do more for beauty and "ideals" by making a way for them along the common highways of life than by any preaching. Such an exhibition will not satisfy the preciousness of the purist, or the connoisseur seeking rare and peculiar emotions, but if we look in the light of our common life at the collection brought together we shall see evident signs of improvement. For what we are needing most just now is the "tidying up" of our ordinary life; to do the ordinary thing a little better. If we do what will make that life more decent and becoming we shall be better able to take the next step. In the light of this we shall better understand why the present is not in any case the time for pylons or even too many war memorials, and that, on the contrary, these preliminary steps of the better ordering of our daily life are the governing factor for their adequacy later. This exhibition shows that in our street advertising, and our books and printing, the approach to a better standard of taste and execution is shaping itself.

Looking round the exhibition we are met by many familiar features. The original paintings made by Mr. Cole for the Underground Railway, representing London occupations, are shown together, along with the reproductions made from them, which are hung above the paintings. It will be seen that these are very adequately reproduced on the whole, though there is a little loss of relation in the sky backgrounds, which are too bright. These posters, and others of similar character, reflect great credit on the management of the Railway, to whom the public are much indebted for introducing this better standard into our public advertising. The Manchester School of Technology shows type printing of excellent character, both in the spacing and general arrangement of the page. The Avenue Press, the Dolphin Press and others show interesting work. There is an unusual distinction and a certain rare and poetic quality in the exhibits of the Pear Tree Press (Mr. James Guthrie). Mr. Guthrie's work in landscape, executed in black and white, is well known and valued for its romantic and arresting qualities, and there are one or two fine examples at this exhibition. They have so much intrinsic merit that it should lead the collector to secure examples while he may. Attractive covers to the new Ordnance Survey Maps show that there is appreciation of the advantage of good design. The woodcuts by Miss Molly Power have an attractive, old-world look, and are well cut. Among the smaller posters we remark for special notice those by Macdonald Gill, Noel Rooke and Hall Thorp—though Mr. Thorp's design is capable of improvement. The bookbinding is of varying merit.

The etchings by George Belcher are refreshing and vigorously executed, with a droll appreciation of character and efficient drawing. Different publishing houses show cases of books, bound and unbound, and their selection seems rather haphazard. As there are many other publishers producing books of equal merit who are not represented, it illustrates the difficulty of drawing any hard and fast line between work submitted. It appears to us that, beyond a general supervision, the Institute should not entangle itself with questions of taste. If, for instance, it is conveyed to the public that the books chosen for exhibition are the best work done in the publishing trade it would be very unfair to other publishers not exhibiting, and it points to the necessity, as has been urged in these columns, of putting the executive of the Institute on a really democratic basis. In this way much criticism would be disarmed and the appearance of an arbitrary and preferential treatment would not exist. No doubt the Governors have these considerations in mind, and we advance these arguments here only out of a genuine desire for the success of the new Institute.

We can do no more than mention a few of the many other interesting examples included in the exhibition. The fine reproductions of the Holbein portraits in the King's collection at Windsor, made by Emery Walker in collaboration with the Hon. John Fortesque, should not be missed, and there is interest in the work of Lovatt Fraser, and the "History of Everyday Things" by Marjorie and C. H. B. Quennell. We desire to give full credit to the Governors of the Institute for the interesting little collection which they have brought together, which owes much, no doubt, to the labours of its courteous, efficient and public-spirited Director, but at the same time we find it difficult to focus its aims, which seem to wander somewhat indiscriminately. Its scope does not seem yet to be defined. This is not altogether a bad thing in so young an institution. But it is impossible to disguise from ourselves that without a more defined policy and deeper roots it is unlikely that it will be able to sustain itself. While on one side it wilts off into a trade exhibition for the purpose of advertisement, with no claim to special distinction apparent as a reason for the presence of the work included, on the other there is evident a desire to show work by craftsmen of more precious and rare accomplishment. We are glad to see that there is no invidious distinction made between them, and that the work is shown together, but we should like to see the policy more defined. Some of the work shown is not covered by the title of "industrial" art, and this we are glad to observe. Is not the title "British Institute of Industrial Art" rather misleading? Does it not tie the hands of such an institution and provoke criticism of sectional aims? Why industrial art only? Is the nation only concerned to further this? It is natural perhaps that a commercial nation should see the objects of such an institution from an angle of vision directed towards the industries of the country. In this we think it is somewhat behind the times, and its psychology has not taken note of what is happening. We are approaching a new epoch. To the more thoughtful the relation of art to life is a practical and paramount consideration if civilisation is to endure, and we welcome this institution as the recognition of this. But it needs a bolder policy, less tied by the limitations of outworn "arts and crafts" prepossessions.

As illustrating the need (and there are many other similar instances) we may refer to some remarks which bear on the subject from the *Journal* of the Imperial Arts League (November, 1920). Speaking of the capture for more commercial purposes of one picture gallery after another and the danger of the disappearance of the arts, the writer goes on to say: "The only escape from the difficulty is by a frank admission that the artist, as a worker or teacher and as a man who does national service of real moment, is entitled to assistance from the State" (already so much bestowed on the manufacturer) "and that he has earned the right to official consideration by many years of inadequately-paid labour. . . . Exhibition facilities should be provided for him in a Government building." The time is favourable for a comprehensive outlook. The difficulty of the new Institute to fill its galleries would be met by not limiting its exhibitions in any arbitrary way. We cannot have several British Institutes, and the present should form the nucleus for a larger institution representative of art as a whole. We urge the Governors, when they next approach the Government for the renewal of their grant, to lay this bolder policy before them. The disappearance of art galleries is likely to be followed by the disintegration of many art societies. There never was a better moment to urge the claims of art to national representation, and in the present British Institute of Industrial Art we see the nucleus of such an institution.

NOTES.

Alleviative Legislation.

THE vicious circle of alleviative legislation ever widens its threatening arms, and it appears to many thinkers that the country may be likened to a troubled bankrupt forever seeking temporary relief by further borrowings instead of creating fresh wealth and revenue. We confess that it is hard quite to understand the position of the unions and of labour, for we believe that much of their dread of unemployment is quite unfounded, and the steps they suggest to prevent it greatly mistaken. We have seen a good deal behind the scenes lately as to building projects, and we believe that if the building trade were set free and if wages were fixed on a fair and stabilised basis we should see an enormous increase of industrial activity.

Claims of the Ex-Service Men.

WHEN we were in the throes of the war no sacrifice appeared too great for us to make, but now when sacrifices are essential for all of us the trade unions might do well to consider whether they should not face the possibility (and it is only that) of some sacrifice from their members for the good of the community at large. Perhaps some of us are getting tired of hearing about the claims of ex-Service men, but have we any right to do so? Till their claims are fairly met the rest of the world ought to face some temporary loss, even if that much be needful. At this time of the year we are all supposed to be more sensitive to appeals of love and pity for our fellow creatures. We firmly believe this spirit exists in every class and condition of our people. May we not beg that those who control the councils of labour will not be behindhand in giving this a full expression?

Dilution in the Building Trade.

WE give elsewhere particulars of the concessions made by the Government to the National Federation of Building Trade Operatives with the object of obtaining the consent of the Federation to the employment of 50,000 ex-Service men, and we think these concessions should give the unions all they can reasonably ask for. In fact, the terms may be considered generous, and the unions will be wise to accept them. The guarantees against unemployment which the Government give are really unnecessary.

Possibilities of Contract.

A SIGN of return to normal conditions is the advice being offered by the Council of the R.I.B.A. to members and Licentiates to obtain tenders for building work wherever possible. It has been suggested for some little time that a return to the contract system was not only desirable but probably possible. Perhaps if human nature were of ideal quality the desirability would not be so great, but we all like to walk on firm ground even if at times it is rather hard!

Saving a Statue.

THOUGH the City of London is not awake to, or unwilling to face the wonderful possibilities for its improvement, the authorities have given way to the demand that the King William the Fourth statue in King William-street, London Bridge, should not be removed. At a meeting of the Court of Common Council of the City of London, on December 16, a proposal was considered for removing the statue to West Ham Park. A letter of protest from the Council of the Royal Institute of British Architects was submitted to the Court, and the proposal to remove the statue was eventually rejected.

Vandalism at Ealing.

THE features that most contribute to the beauty of any locality should be very carefully preserved, and this is especially the case in the suburbs of London, which have in some cases less of old world character than the Metropolis itself. They link such localities to the past, and it must be confessed that there often lies in what remains of old-world character the chief claim to any beauty, so that their value is almost sacred. The old green at Ealing is such an example. Lying back from the main thoroughfare, along which the tide of life flows so restlessly, on the west side of the green stands Walpole House, once the home of the Percivals, and now the public library. Other old houses face that green from within their walled gardens, sheltered by a fine row of ancient elm trees which form a cool shade in summer. The elms standing on this old green, in front of Walpole House, are about the finest of them. We have, therefore, witnessed with great regret the felling of some of these trees, which have given for many years such charm and romance to a spot which was unique in the neighbour-

"Artemis." By MR. GILBERT BAYES.

[In this statuette, in bronze and enamel, the goddess is shown on the back of a stag, and the whole group is full of that knowledge of anatomy and mastery of modelling which makes Mr. Bayes' work delightful; but, perhaps, the hoop, the head of the main figure, and the small woman archer in front create too many points of interest, with consequent divided attention and lack of unity.]

hood. As a result the front of Walpole House is now laid open to the green and a great gap torn in the line of elms which screened it formerly. We refer to this because it touches a matter of great public importance, and the same vandalism has been witnessed in other localities, because there is no sufficient organisation of public opinion to intervene in time. What is unfortunate is that there should be no appeal before such irreparable injury is done, and it must be admitted that the lethargy of the residents contributes to its being possible, but it points to the need for the better ordering of our civic life.

The London Society.

THE London Society, which is doing such important and necessary work for the bettering of London and for stimulating civic pride and interest in it, might consider the possibility—if it has not already done so—of organising lectures in local centres, illustrating their history and features, and suggesting any improvements to better the neighbourhood. We feel that there is a public opinion growing towards a finer appreciation of locality, and if this were organised we should not have to record such instances as this of the destruction of some of the ancient elms on Ealing Common.

War Medals.

THE letter in the *Times* from the Deputy Master of the Mint, in reply to "Numismatist" and others, on the methods employed in regard to war medals, though apparently satisfactory to himself, does not quite meet the contention of those who criticise the methods, and find the medals unsatisfactory. Artists are not satisfied that the best is being done, and there is, we think, a general feeling that the attitude of the authorities in their relation to artists leaves a good deal to be desired, and that the medals would be better if more attention were paid to their views. We feel sure that the use of the reducing machine weakens and mechanises the result and that its employment is much to be deprecated.

War Memorial, Savoy Chapel.

ON the 2nd inst., one of Mr. Gilbert Bayes' latest works was unveiled at the Savoy Chapel. This was a tablet (*see* p. 720) placed on one of the side walls between two windows commemorating the names of those connected with the Chapel who fell during the war. Like all Mr. Bayes' work it is interesting, original, and beautiful. The tablet itself is in marble, having warm brown cloudings, the names being incised and gilt. The most important individual feature is a bronze statue of St. George, about 2 ft. or a little more in height. The modelling of this figure is full of vigour and richness, colour being introduced in the folds of the mantle, the corselet, and the buckles of the shoes. The mantle colouring is a deep, rich red, the colour near the throat and on the shoe buckles being turquoise and gilt. The introduction of this colour work adds very greatly to the interest of the figure, and incidentally presented certain technical difficulties which have been very ingeniously overcome. Above the figure is a relief in bronze, giving, with small amount of detail, the effect of a stream of men continually passing, the line of helmets and rifles being broken occasionally by horsemen. Colour is further carried into the marble work by the introduction of small medallions.

"Brymhilde." By MR. GILBERT BAYES.

The Architectural Association Play.

THE production last Wednesday and Thursday of "Aladdin," by the Lyric Club of the Architectural Association, must have recalled to older members of the Association the admirable series of plays given some years ago, which did so much to increase the popularity and influence of the A.A. No such aids to popularity are needed to-day by this progressive body, its position being firmly established by the broad and enlightened policy of the Council; but the production of such a play as "Aladdin: a Pantomime in Four Acts, by Margot," has a value to both students and practising architects. "Aladdin," the programme informed us, was a "prodigious and preposterous production," and we agree; but its success was undoubted and it was deserved, the play reflecting great credit on both author and players; in fact, it was a worthy successor to the series we have referred to, and all who had the pleasure of seeing it must have hoped that it is the first of a new series. We need not describe "Aladdin," though we may explain that it revolved round the "King's Esquisse-esquisse" in the School of Architecture, Knossos, and that it afforded an opportunity for the display of considerable histrionic ability, of the introduction of amusing topical "hits," and some good songs.

Meetings of Architectural Societies.

WE wonder whether it is too much to expect our architectural societies in London to arrange their meetings so that the meetings of one society do not clash with those of another? On Thursday last week we had the Royal Institute of British Architects and the Society of Architects both meeting at 8 o'clock, while on the same evening the play of the Architectural Association was given! There must have been members of these three bodies who would have liked to be present at each meeting, but in consequence of the absence of a little forethought they had to make a choice of one. These little mistakes cause much annoyance, and should be avoided.

E

GENERAL NEWS.

Appointment.

The Council of the University College of South Wales and Monmouthshire has appointed Mr. W. S. Purchon, M.A., A.R.I.B.A., Head of the Department of Architecture and Civic Design, Cardiff Technical College, Part-time Lecturer in Architecture, an appointment he will hold jointly with his present one. This has been done as a preliminary step towards the arranging of Joint Courses in Architecture between the University College and the Technical College.

North London Estates.

Two large North London estates, the Portland Town Estate of 70 acres, and the Copenhagen Estate of 40 acres, changed hands last week. The purchase price of the Portland Estate is said to be about £500,000.

Examinations in Art, 1921.

The Board of Education announces that it will hold, in 1921, Examinations in Drawing, Painting, Modelling, Pictorial Design, and Industrial Design, provided it is satisfied in due course that there are sufficient numbers of candidates desiring to take the Examinations.

Obituary.

The death is announced of Mr. Frederick C. Tiplady, P.A.S.I., of the Architects' Department, London County Council.

The death took place at Tunbridge Wells, on December 16, of Mr. James Webster, A.R.I.B.A., late of Brockley. Deceased was in his 70th year.

Canadian Battlefield's Memorials.

The Dominion Government has decided to hold a competition for the design of the Canadian memorials that are to be erected on the battlefields of France. The assessors will be Mr. Frank Darling, F.R.I.B.A., representing the Royal Architectural Institute of Canada; Monsieur Paul P. Cret, nominated by the Société Centrale des Architectes Français to represent the architects of France, and Professor C. H. Reilly, F.R.I.B.A., of Liverpool, who has been appointed to represent the Royal Institute of British Architects by the President, Mr. John W. Simpson. The assessors will assemble in Canada in the spring to arrange the details of the competition.

The Power of Publicity.

At the luncheon last week of the British Electrical Development Association, Mr. H. Gordon Selfridge, speaking of the power of publicity to overcome the conservatism which stood in the way of the development of the use of electricity, said perhaps the most conspicuous form of publicity was printers' ink. The man who said "A drop of ink makes millions think" was very near to the truth. There was more money spent on publicity than on any other commodity in the world, and there was more money wasted in that direction than in any other. Carefully and intelligently spent publicity would produce almost any result. Newspapers were the most attractive form of publicity he knew.

The Housing Subsidy.

We are informed by the Ministry of Health that in consequence of the rejection by the House of Lords of the Ministry of Health (Miscellaneous Provisions) Bill it will not at present be possible to pay the full amount of the subsidy in respect of houses completed during the early months of 1921. In order, however, to keep faith with those who have contracted to build houses on the understanding that the subsidy period would be extended, the Government will introduce legislation at the beginning of next Session of Parliament to provide for payments in full to those completing houses between December 23, 1920, and the date of the coming into operation of the new Act, and to extend by twelve months the period during which the subsidy can be earned.

COMPETITION NEWS.

Henry Saxon Snell Prize.

The Henry Saxon Snell Prize (awarded by the Council of the Royal Sanitary Institute) for 1921 will consist of 50 guineas and the Medal of the Institute, and is offered for an Essay on "Suggestions for a System of Central Hot Water Supply and Heating, adapted to Modern Housing Schemes, and to Existing Groups of Houses." Sending-in day, August 31, 1921. Further particulars from the Secretary of the Royal Sanitary Institute, 90, Buckingham Palace-road, S.W.1.

Calcutta.

FOR THE LEGISLATIVE COUNCIL OF BENGAL.—Designs for a Council Chamber. (See advertisement December 17.)

Other Competitions.

The following competitions are also still open:—Public House Competition (sending-in day, January 31); Lockerbie War Memorial, January 31; Owen Jones prizes, November 26, 1921; Royal Engineers War Memorial, March 17; East Ham Hospital, Feb. 25; Llandudno War Memorial.

Kensington.

It is reported that the Kensington War Memorial Committee is considering the question of a war memorial to be erected in the borough, and is anxious that any architect or artist residing in Kensington desirous of submitting a design should be afforded the opportunity of doing so. It is proposed that the expenditure on the structural memorial shall be limited to £1,000. Further particulars as to the proposed site for the memorial, &c., can be obtained from the Town Clerk, at the Town Hall, High-street.

EXHIBITION NOTES.

THE ARCHITECTURAL ASSOCIATION.

There are on view drawings and photographs of Hexham Abbey, Uplands Church near Stroud, Decorative Woodwork at Wintringham, All Saints', Basingstoke, Chapel, Bishop's Hostel, Lincoln, All Saints', Middlesbro', St. Wilfred, Harrogate, St. Margaret's Church, Leeds, &c. These represent something of the excellent Gothic work executed by the late Temple Moore, F.R.I.B.A., and of these he is perhaps nowhere seen to better advantage than in the Lincoln Chapel. None of the illustrations are attractive, but it is interesting to see some of the detail working drawings.

The drawings by Gerald Horsley include several of his clean, incisive pencil sketches, and are essentially the work of a trained architectural observer giving the essential facts of design, though they are not of a sort to stir the pulses or imagination. We regret that a much larger collection of Mr. Horsley's admirable work was not on view.

THE ELDAR GALLERY.

A few pictures and a number of pencil sketches by Eugene Boudin formed a pleasant exhibition at the Eldar Gallery. The colour in the pictures is always agreeable and in the larger ones there is a real blending of land and sky into an harmonious whole which is often lacking in artists' work. In Nos. 34, 4 and 13 there is a clever treatment of blue in water and sky, and in No. 13 the atmosphere and breadth are well conveyed. No. 17 is a charming little picture in low tones of warm grey. There is a lightness and freedom of touch in the pencil sketches which are suggestive of good subjects.

The Architects' and Surveyors' Assistants' Professional Union.

The Architects' and Surveyors' Assistants' Professional Union has issued a 16-page booklet containing the report of the Central Executive Committee for the year 1919–20, in which an outline of the history of the Union since its formation in March, 1919, to May, 1920, is given. So far the Executive has been more concerned with the building up of the Union than the accomplishment of reforms, although some successes in this direction are recorded. The membership is now approximately 1,200, which the Committee thinks "for a calling so 'respectable' as our own is a phenomenal success." With regard to employment, it is stated that during the period under review there was a comparatively small demand for juniors as compared with assistants of several years' experience, and it is anticipated that when the juniors who re-entered schools under the Government grant for Ex-Service men leave these training centres the position will become acute.

Army Supply Base, Brooklyn. MR. CASS GILBERT, Architect. (*See p.* 719).

CORRESPONDENCE.

The Misuse of the Art School.

SIR,—If the statements of your "Note" of last week corresponded with facts they would indeed deserve amendment. I am, however, confident that students of this College during the past 20 years will be as surprised as I am to learn from the somewhat difficult sentence that "The development of the Royal College of Art from a teaching body into becoming producers themselves is a threat to the existence of the independent worker."

The premise is contrary to the facts and the mischievous conclusion is happily non-existent. Attention may well be invited to the important work of the College in benefiting independent workers in the industrial arts of the country, as well as in training teachers to promote this end.

BERESFORD PITE.

Royal College of Art, South Kensington.

[Our reference was to the system and was not intended to refer to the school under the able direction of Professor Rothenstein. In speaking of the Royal College of Art we meant the entire system. We are sorry if our criticism should seem unfair. We should be glad, however, to have an assurance that the abuse is not carried on elsewhere.—ED.]

Public Memorials.

SIR,—It has been brought to our notice that the Earl Kitchener Memorial, to be erected in St. Paul's Cathedral, is likely to be executed in Italy.

As an Association of British Sculptors and Carvers, we wish strongly to protest against the unpatriotic action of allowing work of this character, subscribed for by public funds and erected to the memory of notable members of His Majesty's Services, to be executed by other than British labour and outside the Empire. Members of our Association, who were eligible, went at their country's call and served with these officers, and feel the unfairness of work of this nature being carried out by foreign craftsmen whilst they are willing and capable of producing it.

Will you kindly lend the aid of your powerful journal in our cause, to see that the men who endured the hardships with these notable officers shall also have the opportunity of applying their skill and craft on the memorials erected to the honour and memory of these gallant gentlemen?

Signed on behalf of Committee,

A. BUCKERIDGE, President.

Sculptors and Carvers Society,
Tavistock-street, Strand, W.C.

Bernini's Work at St. Peter's, Rome.

SIR,—Encouraged by your sympathetic notice (*The Builder*, December 17) of my lecture on "Bernini's Work at St. Peter's, Rome," I venture to ask space for a short addition. We in England are so often accused of lacking critical initiative, and any new movements in our world of ideas are so readily attributed to influences from "abroad," that I made particular mention at the close of my lecture of recent English literature in defence of the Baroque. Besides Mr. Selwyn Brinton's articles, I referred to Mr. Martin Briggs's charming book, "In the Heel of Italy," in which he describes Lecce, queen of Baroque cities, and to his graver book on "Baroque Architecture," a work which marks a new era in the history of the subject. I further referred with admiration and gratitude to the "Architecture of Humanism," of Mr. G. Scott, who, with brilliant wit and profound learning, has disposed of the series of fallacies upon which the detestation of sixteenth-seventeenth century Italian art was chiefly based. His pages on Ruskin—arch-enemy of all late Italian art and architecture—are among the most illuminating ever written on that misguided genius.

EUGENIE STRONG.

A DINNER, followed by a General Meeting, was held by the Architectural Association at 34 and 35, Bedford-square, W.C., on Monday last. The chair was occupied by Mr. W. G. Newton (Vice-President).

Election of Members.

After the minutes of the previous meeting had been passed, the following were unanimously elected as members:—

C. E. Sainsbury.
J. D. N. Harvey.
T. A. D. Braddell.
G. Whittaker.
E. H. Palmer.
M. Kouda.
A. C. S. Auld.
J. W. Wood.
D. E. W. Bedford.
G. S. Warnock.
J. V. Acton.
Reginald Johnston.
J. A. Gatti.
F. A. Jamieson.
G. M. Mayhew.
L. E. Skipworth.
C. W. Tatton-Winter.
J. H. Ash.
R. Waddicor.
G. J. D. Stannus.
A. Kfouri.
A. G. Morris.
L. McConnell.

The Architect as a Collector and Connoisseur.

Mr. ROBERT ATKINSON, F.R.I.B.A., then delivered a lecture on "The Architect as a Collector and Connoisseur," illustrated with a large number of lantern slides of antique furniture, brasses, &c., in his own collection. Collecting was, he said, from the architect's point of view something more than the mere gathering together of specimens—it was something in the nature of an education. Besides the pleasure of searching, and possibly finding, there was the pleasure obtained in the repeated examination of the subtleties of design and workmanship which only an architect could appreciate. The architect could not help collecting. An appreciation of old things was almost a measure of the architect's artistic capacity. No architect could afford to be ignorant of decorative essentials. The architect collected instinctively, as his training and calling continually brought him into touch with antiquity; particularly so in the earlier periods of his training, but also in the later periods, if he so desired.

How could an architect start to design a room, without knowing something about furnishings? It was the architect who should lay down the lines of the general furnishing scheme, and he was inefficient if he could not do so. Why should trade firms monopolise the furnishing of houses, and generally produce effects out of harmony with the decorative scheme?

The architect's training enabled him to fix the date of any piece of furniture, by the similarities in details and fittings common to each, practically without effort. The mouldings, panelling and ornament all helped in this direction, and there was always a similarity between the design of the furniture and the panelling of the same period; if one knew the panelling of the Elizabethan period he could at once recognise the furniture of that time because the details were exactly alike.

In collecting, architects would probably commence with side-lines akin to their own profession, such as fire-place implements, lighting fittings in their various developments from rushlights to electric lighting and go on to larger objects, such as mirrors, picture frames, tapestry and hangings, and eventually to decorative furniture such as chairs, tables, and cabinets. These objects, of good design, were of great value to architects, and were a splendid source of inspiration. He recommended those about to start collecting to buy small things, and as the collection grew to weed out those items which were not of any special merit to make room for better specimens.

Mr. E. STANLEY HALL, in proposing a vote of thanks to the lecturer, said collecting was a fascinating hobby, and in its pursuit the architect started with a certain advantage owing to his artistic training. One of the charms of collecting furniture from the architect's point of view was that in the course of his business he travelled all over the country, and was able to get into touch with articles which were only produced in certain localities. A point which architects would be able to judge, probably better than other people, was the period to which the furniture belonged. In his experience a number of Chippendale chairs were very uncomfortable to sit in, and in the collection of chairs fitness for use should be considered first. In the ladder-back Chippendale chairs the top splay but one nearly always broke with continued use owing to the fact that it was only at this point that the back rested. Sheraton chairs, on the other hand, were nearly always made to fit the human body, and were perfectly made. Many chairs of the same period were almost exactly alike except that some had the right curve and some had the wrong curve. It was in the selection of chairs which were properly designed that the architect would score over other people. There was a great difference between a chair made by a craftsman and a chair made by a countryman.

Mr. G. G. WORNUM, in seconding the vote of thanks, said he was of the opinion that the different periods did not necessarily clash with one another, and a room entirely decorated and furnished in one period appeared to be dead and to lack individuality. The mixing of the periods gave much more opportunity to introduce character in a room, and incidentally permitted much more scope in collecting. Maurice Maeterlinck lived in a twelfth-century château which was furnished in the mediæval style, but he admitted that he often got tired of it, and went to live in a part decorated and furnished in an entirely modern style.

Mr. F. R. YERBURY said he found collecting furniture wanted a lot of space, and in these days of shortage of accommodation the other people in the house would probably object to two dressers in one room. A great deal of merit was claimed for the work of Chippendale, but he thought Chippendale, as well as Sheraton, displayed too much of his own personality. The late Norman Shaw was a great collector of clocks, and at one time had 30 on his staircase and 20 in one of the rooms of his house. That was one of the things to be guarded against, for if it were overdone the individual pieces in the collection would not be properly appreciated.

THE CHAIRMAN said whether there were pieces representing more than one period in a room depended upon whether there were enough rooms in the house to accommodate the various periods in rooms to themselves.

The vote of thanks was passed with enthusiasm, and in reply Mr. ATKINSON said he thought it best to collect articles of different periods and mix them. Very good decorative effects could be obtained with furniture of different periods providing there was not too much difference in the line and colour. Small pieces were really the best to collect, owing to the great amount of space required by large pieces of furniture. The main consideration in collecting was to get the pieces in good condition, without worms and imperfections, because many people made a speciality of making wormholes. One should not collect anything that was not useful, and a periodical weeding-out was essential.

A GENERAL meeting of the Royal Institute of British Architects was held at 9, Conduit-street, W. 1, on Thursday last week, Mr. John W. Simpson (President) in the chair.

THE IMPROVEMENT OF LONDON.

MR. THOS. E. COLLCUTT (Past President) read a paper, entitled "The Improvement of London: The Slums of Inner London and the Housing Problem," which, he said, was an attempt to make some practical suggestions in regard to the urgent demand for extending the present business accommodation in the City; to the need for further communication between the north and south sides of the river; and more especially to deal with the housing problem as it affected manual labour. Of these subjects he considered the housing problem as the most important and the most insistent. But it must be approached not only in a practical manner, it must be approached in a spirit of humanity and "fellowship." It was possible to conceive in the future—many people thought in the near future—that London atmosphere would be entirely free from smoke; electric power would be used for railways, river steamers, all factories, &c. In any possible development of inner London the slums must be abolished. Strive for and accomplish all that was possible for the better housing of the people, there was a submerged tenth to consider. But he would ask whether a clean sweep of that "Augean stable" could not be attempted. Must we always have the poor with us? When the present conditions of the home life of manual workers were rightly and fully realised, it was impossible to doubt that they to a large extent were a cause of the feeling of unrest existing in the working classes. He recently paid a visit to Lambeth, and went into two two-storied houses—the ground floor room, 9 by 10 ft.; staircase, 2 and 3 ft. wide; scullery, 7 by 7 ft.; one bedroom only—with five people sleeping in it in the one house and four in the other.

THE GROWTH OF LONDON.

The housing schemes being carried out by the London County Council for manual workers appeared to be developing very rapidly, and in a satisfactory manner, though they could only be considered a partial solution of the difficult housing problem. They formed entirely new areas of population, but added in an alarming degree to an already overgrown town. For years the expansion of London had been considered by all with apprehension. In defence of that expansion, it had been affirmed that there was no other way to meet the urgency of the case. It appeared to have been taken for granted that expansion must be outwards—nevertheless it ought to be questioned whether outward expansion would adequately relieve the wants and desires of the workers and of the community as a whole. The consequence of continued expansion would mean that traffic by rail, tram and bus would be greatly increased. He would ask whether, in place of new residential centres, it would not have been more desirable to create new industrial centres on the outskirts?

The tastes and preferences of the Londoner as compared with those of the country-born could not be ignored. It was doubtful whether they had been sufficiently considered. There was no doubt that a very large proportion of Londoners would rather live in London than in the country or the suburbs. There was a vast number of people whose occupation made it necessary they should live near their work. The localities in which the latter found work were constantly changing in every direction in and out of London. A workman living in the extreme north of London had often for considerable periods of time to journey across London to go to his work in the extreme south; that involved a journey of an hour and a-half or more, night and morning.

The creation of further residential centres round about London was fraught with many serious objections, The population was still increasing, and the consequent expansion of the town must be met in some form or other. The housing schemes now proceeding mostly left untouched the hideous slums. Peabody and others interested themselves, a mere handful among millions of their fellow citizens, and the "Peabody" dwellings were the outcome of their efforts. The Peabody dwellings were followed by the L.C.C. industrial dwellings. Many of these, however, were far from being satisfactory except in teaching what to avoid; for example, when they were built in blocks the space between them should be much greater, and in many instances the ground floor rooms had not nearly sufficient sky area. In all cases the general aspect was of the gloomiest character, depressing to a terrible degree when only passing them in a casual manner. Of course, those remarks did not apply to the more recent industrial flats. It was for architects seriously to consider any remedy, even though a partial one, which would tend towards obliteration of some of the London slums.

The remaining portion of the paper was an amplification of suggestions put forward by him in *The Builder*. In a letter to the *Daily Telegraph* in April last, he suggested that an area of about 150 acres on the south side of the river should be acquired for the purpose of building workmen's and middle-class dwellings in the form of flats, and that a large area immediately abutting on the river should be devoted to business premises and public buildings and gardens. That area would comprise the main frontage extending from the London County Hall to the site of the proposed St. Paul's Bridge, with an embankment between those points. That would, of course, involve the removal of the wharves fronting on the river, and the clearance of a large area chiefly composed of slums. There was no valid reason why the wharves could not be removed to other districts without detriment to their business. Many factories went to the extreme outskirts, many were now located on sites adjoining railways, and villages were springing up round them. There should be control over the introduction of further factories into inner London.

HIGHER BUILDINGS.—There were those who decried any suggestion to improve the south side of the river, pleading that under some atmospheres it was picturesque. Perhaps that was so when it was looked at from the northern side, whence the foulness of it could not be seen. There was no doubt that in future, whenever the opportunity arose and the surroundings were suitable, they must build upwards. The proposal put forward by Sir Martin Conway for an upward expansion of London was most admirable, but at the same time they did not wish to emulate the New York skyscrapers. There was no valid reason why flats for all classes should not be built to a height of twenty stories on the embankment which it was suggested should be formed on the south side of the river.

There was a great demand for that class of residence, notwithstanding that in very many instances some of the rooms received light from internal areas only. Flats might generally be taken to a height of six floors, the height being restricted by the conditions of the London Building Acts. If there were no such restrictions they could be built to a height of twenty or more stories, the topmost story being a more desirable residence than the lowest one. In some flats there was central heating; in all there was a great saving of labour and of worry in housekeeping, When properly planned they were as isolated as the ordinary street residence.

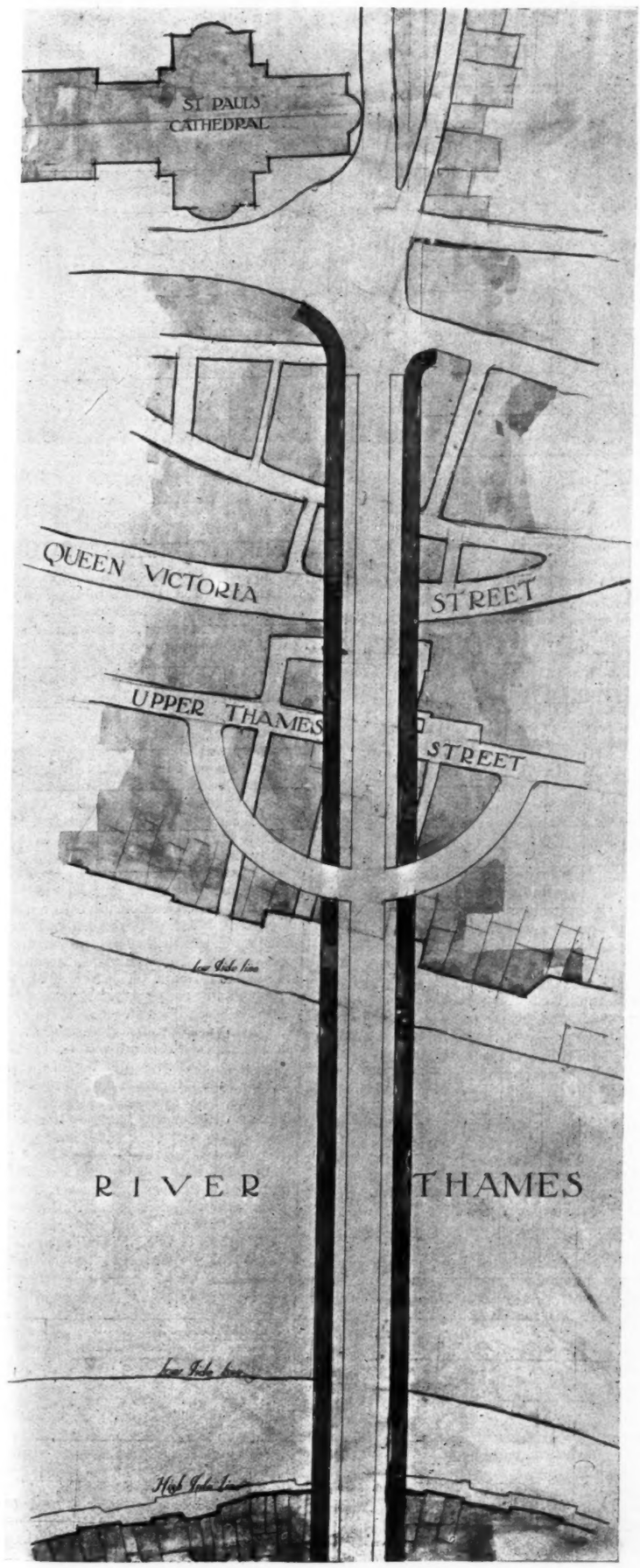
Where there was a sufficient area on which to embark on a large building undertaking, with an outlook over the river, structures of an elevation of 200 to 250 feet would not create an overpowering effect, especially as each block would require a certain amount of space around —at least 55 degrees of light to ground floor windows—thus ensuring that no building would be overshadowed by its neighbour. We had not followed other nations in regard to the height of churches and other public buildings; consequently, although not inferior in beauty, they sometimes lacked the imposing quality which mere size so often gave.

But only the fringe of "slumdom" would be touched by the rebirth of Lambeth. There remained other wildernesses, and in these we might well consider the question of expanding London upwards. It was worthy of grave consideration, and in such areas as Hoxton, for instance, would go far towards solving the housing problem. He did not suggest, however, that skyscrapers of the New York type were suitable for London.

RE-HOUSING.—In every large scheme of rebuilding the first obstacle was how to house the inhabitants during the process, especially in dealing with the slums. He suggested that Army huts and other temporary Government buildings could be erected on open areas, and converted into temporary homes for those families ejected from the houses to be destroyed on the area of each new tower of flats. There were many such open spaces which could be so used. For instance, portions of Victoria Park, Meath Gardens, London Fields, Well-street Common, Highbury Fields, and in the case of Lambeth, the Palace Gardens. Another manner of proceeding would be to build flats forthwith on such spaces as Meath Gardens, Well-street Common and a portion of Victoria Park. The loss of the open spaces could be compensated by new spaces formed by the demolition of condemned slums.

In order to speak with authority on residential flats, he had made plans of various groups, and found that each dwelling could be approached from a hall common to all, that each room could have direct and unobstructed light, and that for such things as slop pails, &c., which necessitated a space open to the air, a form of balcony might be made an agreeable architectural feature. Bachelor and spinster residences could be designed with suites, two or three rooms, or a dwelling of one room, very similar to those for students in Eton School. Of course, strong exceptions would be taken to any method of fusion of the classes. It would be said that the manners, customs and sense of decency of the working classes were on a lower standard than those of other classes; it would be impossible to live under the same roof, or even in the same locality. But manners and customs changed. They were on a higher standard now than at the beginning of the nineteenth century. There must be no working-people's localities in the future. No right feeling of fellowship could be encouraged if the social gulf was allowed to remain.

ST. PAUL'S BRIDGE.—In addition to the urgency of the housing question there was very great need for further business accommodation in the heart of the City. The building of a bridge starting from St. Paul's Churchyard had been in abeyance since 1914. It was now proposed to proceed with the scheme, and at a large increase of cost. His proposal was that the approaches on both sides should be formed into streets and that those streets should be continued across the river. They would be carried on arches similar to those, say, of Waterloo Bridge. He was assured by an eminent bridge engineer that his proposal would entail no engineering difficulties, either as regarded the substructure or the extra width



Suggestion for St. Paul's Bridge.
By MR. THOS. E. COLLCUTT, F.R.I.B.A.

of bridge. The total width would be 150 ft., rather less than the railway bridge near Blackfriars Bridge. There should be roads constructed leading by easy gradients to the approach of the bridge. The buildings on either of the approaches would go to the full height allowed by the Building Act. That, of course, would mean about three extra stories from the level of Queen Victoria-street to the new level. On the bridge portion of the scheme, a length of about 1,100 ft., the buildings could go to a height of three stories, with the result that a very fine architectural effect could be attained. Of course, that would only be seen from the river, from the windows of adjacent buildings or from an aeroplane.

The completion of St. Paul's Bridge would give an immense area of property on the south side ripe for development and easy of access. The distance from St. Paul's Bridge to the end of Fenchurch-street was 1 mile, to Moorgate-street Station half-a-mile. A new centre of City activity on the south side would be reached by a street of continuous buildings ¾ mile in length. On the other hand, the ordinary open bridge would mean a walk of nearly a quarter of a mile from business house to business house. There was a great need for more bridge communication between the north and the south of the river. With regard to the extra outlay involved in making the bridge 60 ft. wider than now contemplated, and including the superstructures of three floors, it might be put at a million or a million and a half. He was assured that a rental of 15s. per ft. super for the ground floor, and 7s. 6d. for the two upper floors could be obtained. On these values the total rent of £120,000 per annum would mean nearly 10 per cent. interest to the Corporation on an outlay of £1¼ millions, a "potentiality of becoming rich beyond the dreams of avarice." The property was at present of relatively small value; compared with City property it was as 1 to 10, or even 1 to 15. His opinion that a properly constituted building scheme could be made to pay was strengthened by the opinion of an eminent property surveyor.

Discussion.

MR. RAYMOND UNWIN, who proposed a vote of thanks, said he agreed there were great possibilities in the opening up of the southern side of the Thames. With regard to the argument in favour of extending London upwards instead of outwards, it was a fact that those responsible for housing in cities where high buildings had been erected as a solution of the problem—such as New York, Chicago, Pittsburg, Berlin, and other large cities in Germany—all envied London because it had kept to small houses. It had to be remembered that in the winter the sun only rose 15 degrees in this country, and, therefore, for every story added, a larger open space had to be allowed around the building. He would not say that every use had been made of height in buildings in this country for special purposes, but, as a solution of the housing problem high buildings would be found much more expensive in land and in the number of people which could be housed healthily on a given area than separate dwellings. It was the traffic congestion which made people think London ought to be extended upwards, but traffic congestion was much worse in cities where high buildings already existed. When the population all lived in the town the transport facilities were used by every member of the family, but if the residential areas were outside the city, connected by rapid transit services, only one member of the family would need to travel to town and back again each day. The number of journeys on public conveyances increased directly with the density of the population.

MR. JOHN SLATER, in seconding the vote of thanks, said he thought the idea of buildings on the bridges across the Thames a very happy one, and he was sure the cost of the increased width would be more than repaid by the rents from the buildings erected on them. In regard to high buildings on the riverside, the fact could not be got away from that there had to be

backs to the buildings and they would overshadow all the other buildings on that side.

MR. WM. WOODWARD, referring to the financial aspect, said it was very difficult to get money from the Government for improvement schemes. The height of buildings should have some relation to their position. One of the purposes for which the Ministry of Health was formed was to provide houses, but it had utterly failed. Houses would not be built in sufficient numbers until they were again built by private enterprise.

MR. GEORGE HUBBARD said the slums ought to be cleared, but how were the people to be housed until the new houses were built? There was no incentive for anyone to own or speculate in small house property.

MR. E. P. WARREN said there were no streets in London wide enough for high buildings. If high buildings were built in Portland-place that street would be reduced to a lane—Victoria-street, Westminster, although 40 ft. wide, was a dismal lane because of its high buildings.

THE CHAIRMAN said Vitruvius pointed out that streets must be planned according to their aspect, and high buildings in an east-and-west street, such as Victoria-street, presented a different problem from high buildings in Portland-place, which ran north and south.

The vote of thanks was very heartily passed, and MR. COLLCUTT briefly replied.

Notes from the Minutes.

The following notes are from the Proceedings of the Council Meeting on December 13 :—

WAGES IN THE BUILDING TRADE.—The Council has decided to publish a note in the *Journal* advising Members and Licentiates to do their best to obtain fixed tenders for building work whenever possible, and to notify the public Press of the action taken in this matter.

TOWN PLANNING.—The Council has decided to communicate with all the Allied Societies in Great Britain and ask for their co-operation in securing that a competent architect is appointed in connection with all town-planning schemes.

A letter has been addressed to Sir Henry Maybury, of the Ministry of Transport, expressing the gratification of the Council at the action already taken by the Ministry of Transport with regard to the construction of arterial roads in the neighbourhood of London, as approved by the London Arterial Roads Conferences held under the auspices of the Local Government Board; expressing the hope that the additional roads suggested by the London Society in its development plan will be considered in each case; inviting the attention of the Ministry to the suggestions of the Thames-side Housing and Development Committee; and impressing upon the Ministry the paramount importance of immediately preserving the routes of the proposed arterial roads and of obtaining the authority of Parliament for this purpose.

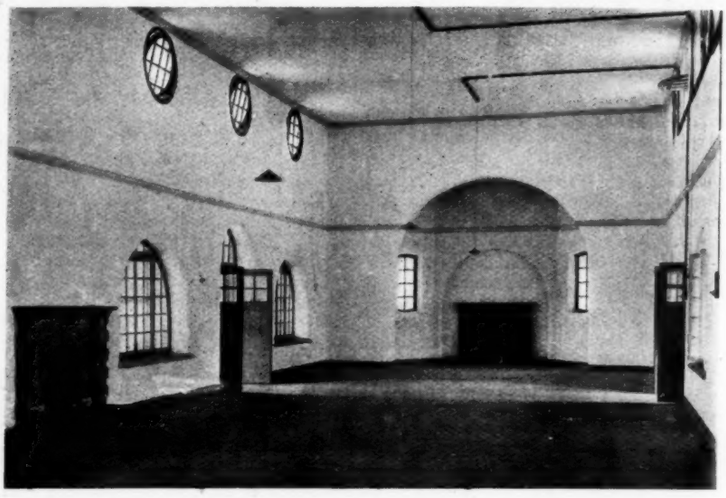
GRANTS.—The Council has made grants of £20 in aid of the funds of the Conjoint Board of Scientific Societies, and £5 in aid of the funds of the British Engineering Standards Association.

THE HENRY JARVIS TRAVELLING STUDENTSHIP.—The Council has sanctioned the preparation of a special certificate to be awarded to holders of the Henry Jarvis Travelling Studentship.

CLASSES OF MEMBERSHIP COMMITTEE.—The Council has adopted the report of this Committee, and important proposals for the reorganisation of certain of the classes of membership will shortly be laid before the general body.

ANNUAL EXHIBITION OF ARCHITECTURE.—The Council has approved of a report of the Art Standing Committee on this subject, and a detailed programme will shortly be considered.

HONORARY CORRESPONDING MEMBERSHIP.—Monsieur Albert Louvet, of Paris (President of the Société des Architectes Diplômés par le Gouvernement), has been nominated as Honorary Corresponding Member of the Royal Institute in place of Monsieur Louis Bonnier, deceased.



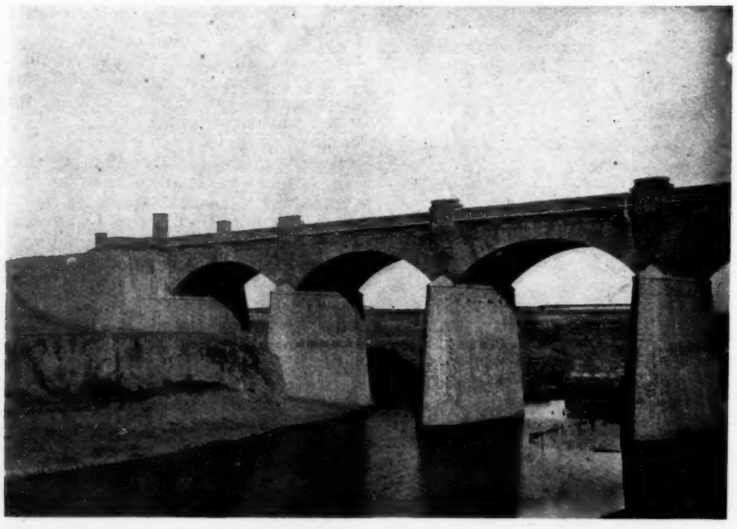
Dining Hall, New Barracks Chaklala.—MAJOR B. MATTHEWS, F.R.I.B.A., Architect. (*See p.* 719).

THE HELLENIC SOCIETY.

ON Wednesday last week, Mrs. Arthur Strong, F.S.A., Assistant Director of the British School at Rome, delivered a lecture on "Archæological Excavation in Italy," illustrated by lantern slides. The ground covered ranged from Arezzo in the north, where a wall of fifth century date and very fine terra-cottas were found, to the island of Sardinia on the west. Here a temple of the date of the "Nuraghi" has been discovered, with a stair leading down to the beehive-shaped chamber, which has a deep ritual well in its centre. From there Mrs. Strong passed to Lucania, the modern Basilicata, where an interesting pre-historic hill-fort has been explored, thence on to the Italian dominions beyond the seas. Excavation is proceeding rapidly in the whole province of Cyrenaica, especially at the temple of Apollo and the Thermæ, or baths; at the Agora; or market-place, and at the temple of Jupiter, which had so curiously escaped the English excavators, Smith and Porcher, in 1861, although they came upon the line of columns and found a statue of Athena on this spot. The temple of Isis, known to Smith and Porcher as the temple of Venus, has yielded a splendid harvest of statues, including the upper part of a fine Hecateion; a head with coiffure in rolled bandeaux of the Ptolemaic period; a statuette of Venus; a figure of "Lybia"; and a peculiarly interesting statuette of Isis with the synthetic attributes of a Syrian goddess wearing the *uraeus*, her lower limbs encased in a sort of apron-like sheath of meshwork, probably of metal, and the under-tunic forming fan-like folds round the ankles in the manner of the Ephesian Artemis. This statuette is moreover remarkable for its brilliant colouring. Further important finds were the statue of a priestess of Isis, wearing across her body a thick floral garland entwined with ribbon; a statue of "Africa" found at Tolmetta (ancient Ptolemais), and last, but not least, the magnificent "Victory," a fifth century type found at Zauyah el Badeir.

Among other objects illustrated were two fine reliefs of the end of the first century A.D. found at Sorrento; a relief of the Hadrianic period, with a curious scene of Egyptian ritual, found at Ariccia, near Rome; and a plan and model illustrating the proposed scheme for clearing the site of the Imperial *fora* at Rome, a difficult and expensive enterprise, since the *fora* are situated in a crowded district of the city.

In conclusion the lecturer read an extract from Dr. Ashby's Annual Report on "Archæological Excavation in Italy"—which stated that Italian archæologists were doing a great deal of good work not only in Italy but in other lands, despite the various difficulties due to the high cost of labour.



New Military Bridge over Leh River, Chaklala.—MAJOR B. MATTHEWS, F.R.I.B.A., Architect. (*See p.* 719).

Leading Contents.

PAGE

THE POLICY OF THE BRITISH INSTITUTE OF INDUSTRIAL ART 711
THE R.I.B.A. 716
THE HELLENIC SOCIETY 718
THE REPORT OF THE BEAUX ARTS BUDGET FOR 1920—II. 722
ONSLOW GARDEN VILLAGE 723
THE TOWN PLANNING INSTITUTE 724
CIVIC SURVEY AND TOWN PLANNING 725
HOUSING AND TOWN PLANNING NOTES.. 727
THE BUILDING TRADE 729

ILLUSTRATIONS.

Army Supply Base, Brooklyn.

This building is located in the Borough of Brooklyn, N.Y., and consists of a great group of warehouses, steamship piers, railroad yards, power plant, repair shops, &c. It was constructed for the United States Government during the war. The buildings are of reinforced concrete. The dimensions of Building "B," which is the large building in the foreground and of which a nearer view is shown, are 980 ft. long by 300 ft. wide. The entire project, including the steamship piers and railroad yards, was erected in accordance with the plans prepared by Mr. Cass Gilbert, of New York, and was constructed by the Turner Construction Company. The Base was planned under the direction of Major-General George W. Goethals, Quartermaster-General, and carried forward under the administration of the Construction Division of the War Department, of which Brigadier-General R. W. Marshall, Jr., was Chief, and Lieutenant-Colonel H. S. Crocker was Constructing Quartermaster. Buildings "A" and "B" shown in the illustrations are of equal length and height, and are connected by bridges and tunnels. The total cost of the group, including grading, dredging of channels, construction of steamship piers, railroad tracks, building bridges, tunnels, &c., was, in round figures, 35,000,000 dollars, and was completed in less than twelve months; in fact, the piers and buildings were in use within six months from the beginning of construction. The buildings are equipped with a remarkable elevator system of ninety-six elevators, operated by electric control, so that the entire system can be operated by nine men, and may be operated by a single central operator. The railroad yards will accommodate about 1,530 railroad cars, in addition to which are added the necessary switch tracks and about two miles of tracks occupying space upon the steamship piers, half of a mile on each. The speed of construction is illustrated when it is stated that a rough hillside was graded out, the valleys being filled where necessary, and an inspection made of the roofs of the two main buildings, within 130 days from the beginning of operations.

Military Buildings at Chaklala.

Owing to the rapid development of mechanical transport on the frontier of India during the war, it became evident that a central depot for stores was necessary, where spare parts for lorries, etc., could be stocked in readiness for immediate issue.

Chaklala was originally a small village about two miles from Rawalpindi, the "Aldershot" of Northern India, and it was decided, owing to the lack of a suitable site in Rawalpindi, to erect at Chaklala the Central Mechanical Transport Stores for the North-West Frontier. Before a start could be made with any work, a brick manufacturing works had to be established near the building site, all the bricks for the buildings being moulded from local clay and burnt in Bull's kilns. In order to provide a road to the site it became necessary to construct a bridge over the Leh River; for most part of the year this is only a shallow stream, but during the floods in the rainy season it rapidly rises, and the bridge is therefore constructed at a height well above the maximum level reached by the water in flood time. The piers are built of local stone obtained about three miles from the site, the arches being constructed of local bricks on wooden centering.

It will be seen from the plans that the Stores are built in a series of parallel bays, each self-contained with Store-keeper's office; an underground tyre store is constructed beneath the long store at either end. In order to reduce the temperature of the tyre store during hot weather, water-cooled air is forced into the building by means of a "Sirocco" electric fan, and extracted by another fan at the opposite end of store, thus ensuring a continuous supply of cooled air.

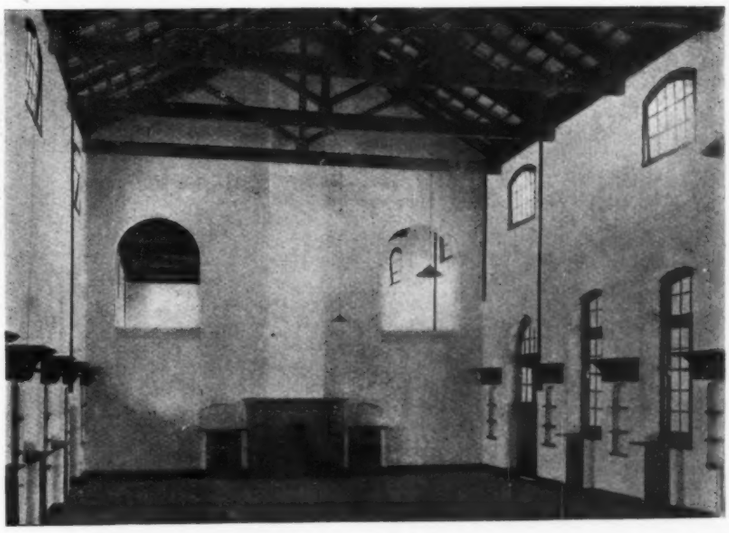
The buildings are constructed of local bricks, roofed with deodar wooden trusses and Allahabad tiles (manufactured on site), somewhat similar in design to Roman pantiles. The roofs over the verandah are of reinforced brickwork, and the wide cornice (locally known as Chhajja) is of Taraki stone. The Administrative Offices are placed in a central position, and accommodate the officers in charge and the clerical staff. A block of barracks has already been constructed for the accommodation of British personnel.

The old barracks in India are massive barn-like structures, with double verandahs on each side in which the occupants take their meals, and it is only in recent years that separate dining accommodation has been provided. In the Chaklala Barracks an attempt has been made to combine the barrack rooms and dining hall in a definite lay-out. In the old barracks each man is provided with a kit box placed at the end of the bed, but in these barracks each man has a small cupboard for kit built into the wall, and recessed shelves over the bed for books, &c. A different style of treatment has been adopted for the dining hall, thus getting away from the usual barrack-like appearance of such rooms.

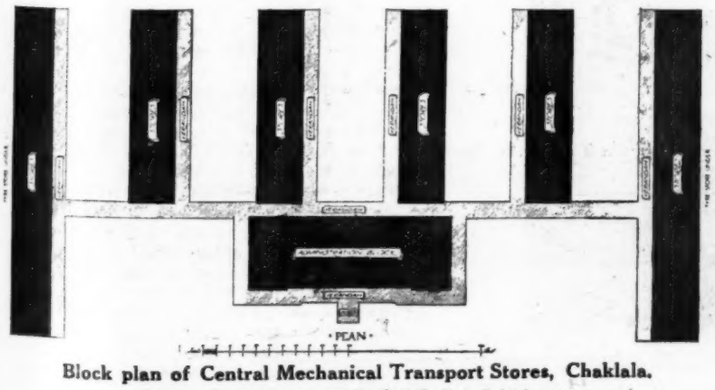
Special attention has been given to the washing arrangements in these buildings (the existing practice is for the soldier to take his own enamelled basin to the wash-house on every visit). Earthenware lavatory basins are fitted, and long baths in bathrooms instead of the usual circular tin tub. A circulating supply of hot water is laid on to wash-houses and bath-rooms.

The kitchen accommodation provided consists of kitchen, scullery, preparation room for pastries, etc., grocery, fuel and meat stores, with cooks' clothes-room and mineral water bar. Electric lighting and fans are installed, power being obtained from a self-contained plant.

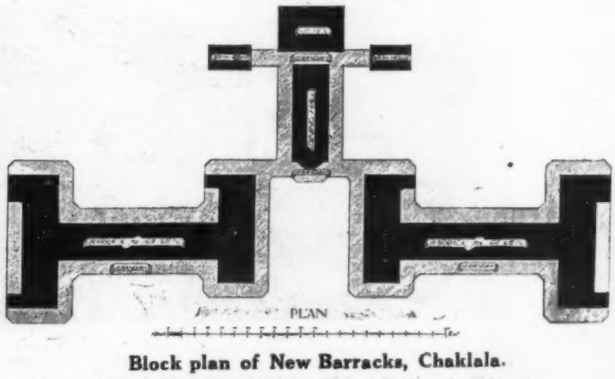
The buildings were designed by Major B. Matthews, F.R.I.B.A., Consulting Architect for Military Works in India, and were erected under the supervision of the late Major R. J. Weston and Major W. H. Chaldecott, Royal Engineers



New Barracks, Chaklala.
MAJOR B. MATTHEWS, F.R.I.B.A., Architect.

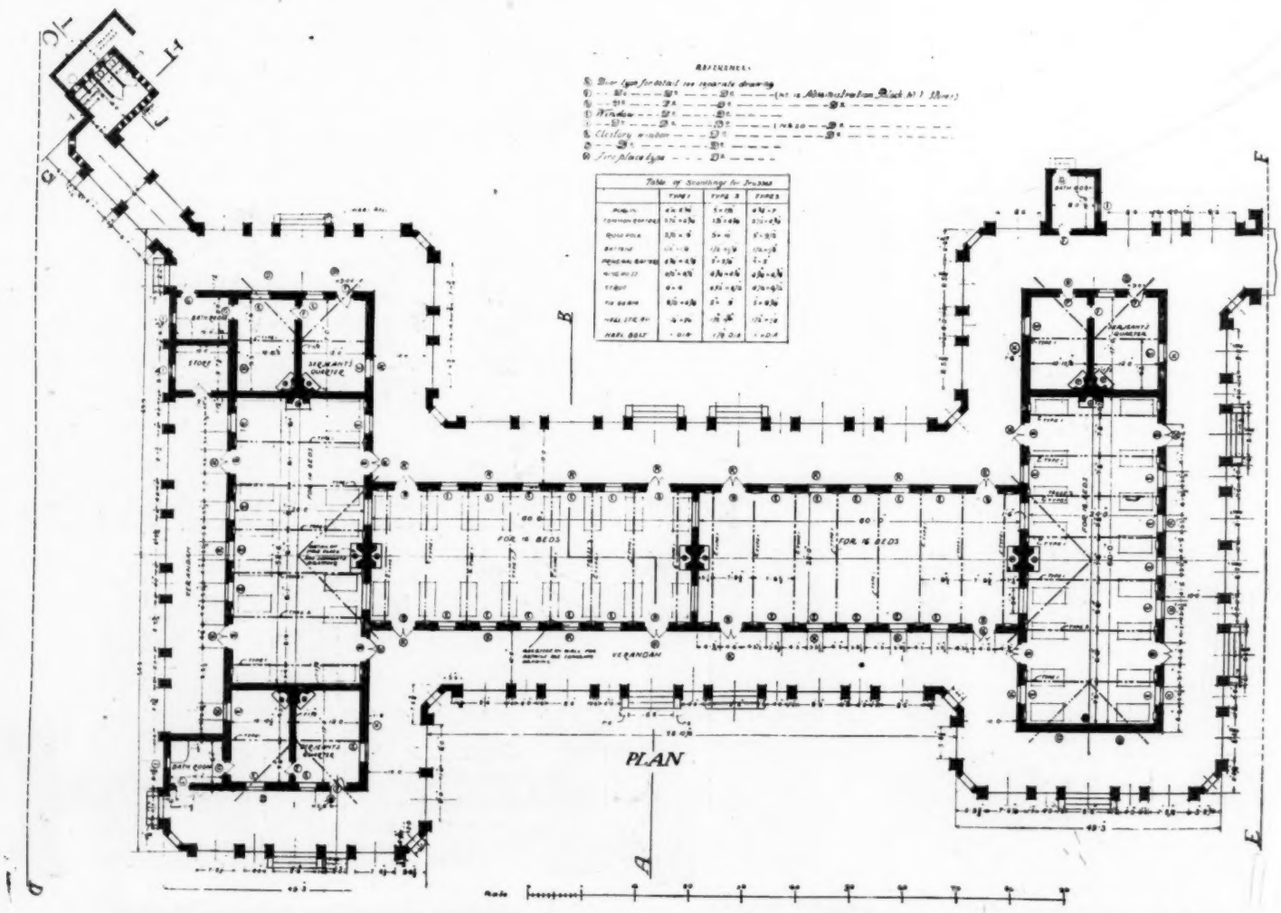


Block plan of Central Mechanical Transport Stores, Chaklala.
MAJOR B. MATTHEWS, F.R.I.B.A., Architect.



Block plan of New Barracks, Chaklala.
MAJOR B. MATTHEWS, F.R.I.B.A., Architect.

War Memorial Tablet at the Chapel Royal, Savoy. By MR. GILBERT BAYES. (*See p.* 713.)



Barracks for Motor Transport Units, Chaklala. MAJOR B. MATTHEWS, F.R.I.B.A., Architect. (*See p.* 719.)

United States Army Base, Brooklyn.

MR. CASS GILBERT, Architect. (*See p.* 719.)

THE REPORT ON THE BEAUX-ARTS BUDGET FOR 1920.—II.

By H. Bartle Cox, A.R.I.B.A.

In Part I the suggestions from the Ministry of Fine Arts touching the Rome theory were dealt with. M. Rameil's "Rapport," coming from official quarters, shows that the French Government, more eclectic than formerly, is being roused to a progressive attitude. The exact words of the Reporter being more cogent than comment, we here give a literal translation of what is formulated with reference to the Ecole Nationale Supérieure des Beaux Arts*—

"The criticisms annually addressed by the fine arts reporters to the old institution of the Rue Bonaparte seem at last to have been heard, and it appears as though there were something changed in the spirit of the 'Institut.' Little by little, reforms being super-added, teaching at the Ecole des Beaux Arts is becoming less exclusive, is turning more and more towards practical results, towards a more democratic diffusion of art, which apparently immutable rules reserved hitherto to an élite. 'The real democracy,' said Pasteur, 'is that which permits each individual to give his maximum of effort.'

"To leave to each every liberty to follow his path, to prepare the access by a general education of taste and emotion, such appears to us as the directing principle of our national school, in which, without forcing for this purpose any vocation, the tendency towards utility must not be sacrificed.

"When we come to speak of applied art, we shall lay stress on the specialty—if it may be said—of art in handicraft. Whilst handicraft in art tends to dominate our talent, and whilst, on the other hand, genius without handicraft despises the least effort, we should ward against these two perils by declaring the principle of a useful beauty, less a matter of chance, and by opening wide the door to creative thought and to the choice of its ideal. It is in this programme of liberty that is embodied our conception of a fine arts training open to all the hopes of realisation, of a training which will not be exclusively devoted to the obtaining of the Prix de Rome, but which will tend more and more both towards beauty and utility.

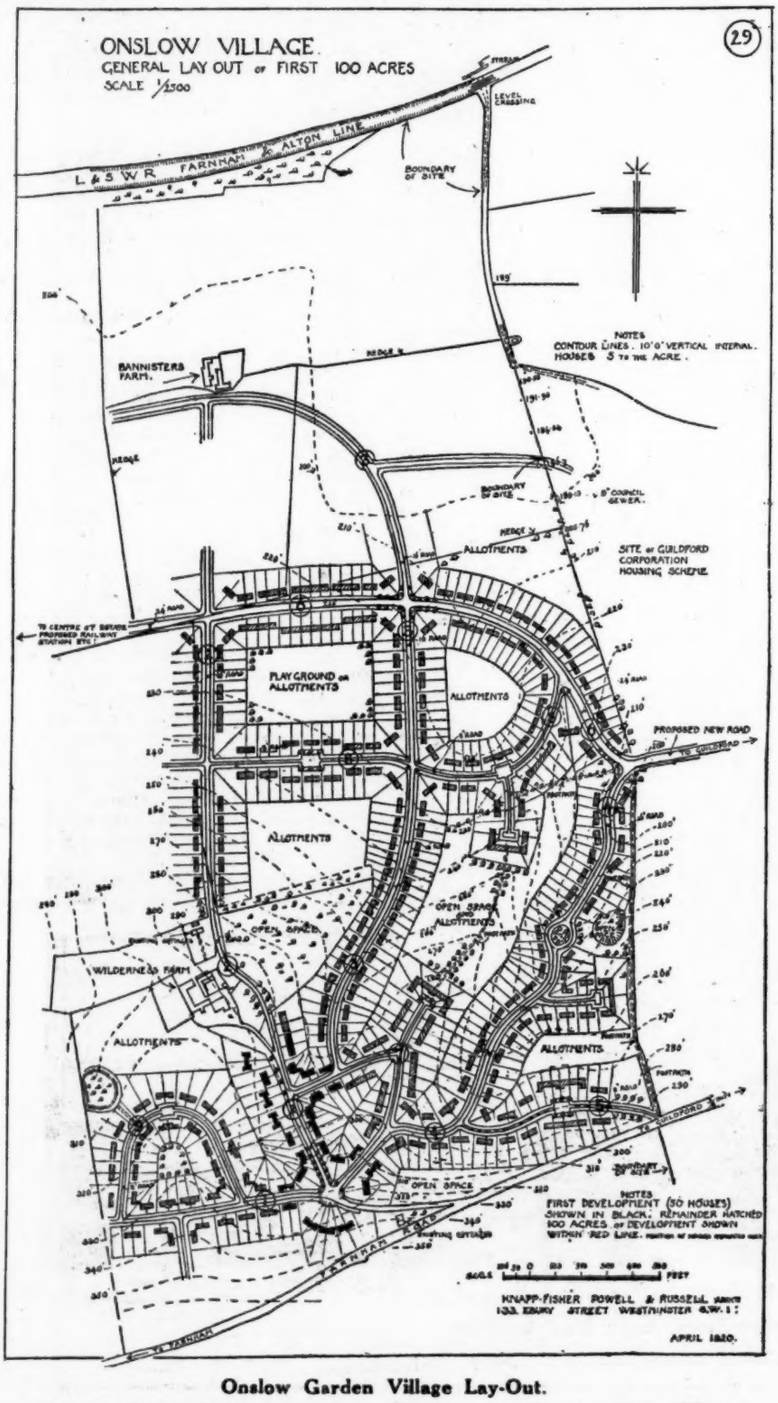
"In the section of Architecture, for example, we shall approve of an orientation in the teaching of the art of building in which professional knowledge should hold a more important place, and the same in the section of painting, for decorative composition, of competitions better adapted to realities. The concern of an architecture more and more directed not only towards a more speaking expression, more '*régionaliste*,' but still more in conformity with our customs, towards the progress of utility and of hygiene, is at the very basis of the art of building. The adaptation of the edifice to its surroundings is altogether a problem which the ground dictates by its materials, by its scenery and its sky, and we ought positively to break, notably with the go-everywhere type, spurious, which the grievous conception of a perverted classic art has, for too long, imposed upon our provinces. Too many pompous town halls without character, too many stations to the invariable model shock us considering the diversity of the sites. The observation of the laws of urbanism is urgent. '*Régionalisme*' will be established upon rationalism. And architectural line, like the colour of architecture, must inspire from these directing principles, if, in the matter of regained personality, they wish to recover relationship with our glorious national tradition.

"Another modification would consist, for the drawn portrait competition, in leaving the pupils 'free to employ the process of expression which would the best suit them.' The obviousness of these reforms is no less apparent than the necessity to create among our future painters a course (of lectures) on the chemistry of colours. On the harmful reaction or of the salutary agreement of the colours depends the preservation of the masterpieces of to-morrow, and this technical study is at the very basis of the conception of the picture. Since the Ecole expects practical realisations, it seems that it should no longer neglect this initial instruction of the pallet.

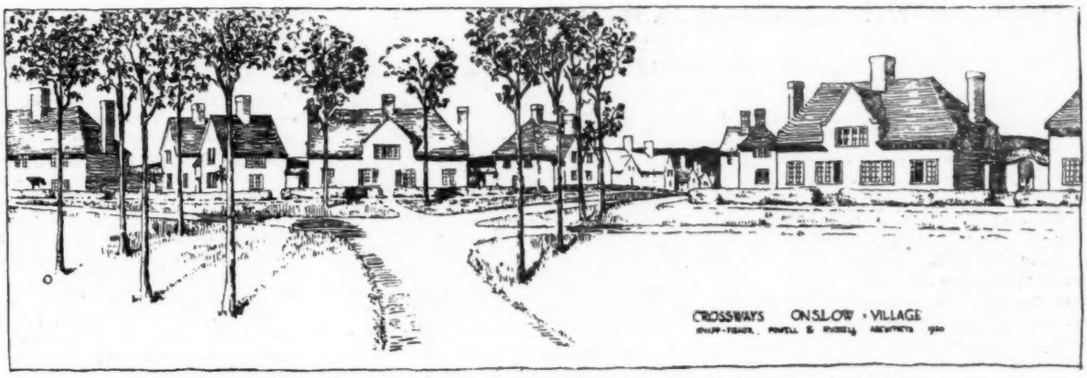
"We must from this moment be thankful to it (the Ecole) for not resisting to some extent the current of progress. A recent modification to the rules governing the Prix de Rome competitions should be praised. It is only grievous that these happy initiatives of the Académie des Beaux Arts, by way of trial, moreover, only concern the section of painting. . . . These improvements will more balance, to a certain degree, the merits and the chances of the candidate. The one that follows tends to set inspiration free. For the final competition, instead of a single subject, three will be proposed, taken from the most ancient times up to the contemporary period, and competitors will be allowed to choose.

"The breath of modernism which seems to blow so successfully on our national higher school of the fine arts has not only influenced the 'programmes' (subjects set), it has invigorated teaching itself. Some new heads of ateliers have been chosen from outside the 'Institut'—a decision of praiseworthy eclecticism—and these new masters, discriminatingly chosen with a rare felicity from among those who, apart from any coterie, honour our modern art, are only approved for three years. The principle of these temporary nominations is profitably opposed to pedagogical irremovability, enemy to all initiative. Thus, thanks to a training capable of renewal, a school will no longer be founded upon the oppressive manner of a one-

* Credits granted under four headings for this item amount to 1,100,500 frs.



Onslow Garden Village Lay-Out.
Messrs. Knapp-Fisher, Powell & Russell, Architects. (*See p. 723.*)



Onslow Garden Village. MESSRS. KNAPP-FISHER, POWELL & RUSSELL, Architects.
[The centre blocks are already inhabited].

and-only master, whom the students often resembled only by the workmanship" (pages 9, 10, 11 of the "*Rapport*").†

The capital difference between modern French architecture and the architecture of other countries is that French work generally shows the result of more scholarly training, the rest is a mere matter of temperament in details and adaptation to different national requirements. This training, based upon aristocratic culture, has nowhere, since the Italian Renaissance, attained to such universal renown as in France. This was and is due to Government action, but the Government which supplies the funds for the national encouragement, now feeling that France is being economically ousted by German and Austrian applied art, is making a strenuous appeal to the country to see that it does not rest on the glories adapted to a past age. *Hommage à l'Ecole—mais—Vive le Ministère.*

The Ministry, dating back to more than two centuries, has created for France the best centralised school of art in the world, and is now telling its electors that their problem is, "still," to organise victory and not to take it for granted. The Republic specially advocates greater encouragement for the industrial arts of the Provinces, and the next article will show that democracy demands decentralisation.

St. Paul's Chapter House.

The Chapter House of St. Paul's Cathedral, on the north side of St. Paul's Churchyard, has been let to Lloyd's Bank on a lease of 21 years. The Chapter House, which was designed by Wren, has, since 1684, been partly used as a residence by the Archdeacon of London. It is understood that very little structural alteration will be carried out to adapt the house to its new purpose, and the characteristic features will be carefully preserved.

† It has been thought advisable to render the above in a manner as faithful to the text as possible rather than attempt to make the translation read as though the matter had been thought in English.

ONSLOW GARDEN VILLAGE.

THE Onslow Garden Village Estate, near Guildford, comprises 646 acres, of which about 200 acres will be covered by the Garden Village, the remainder being used for small holdings, farms, factories and works, and sites for private building. The decision to proceed with the scheme was come to early in March, 1920, when the Guildford Corporation decided to invest £20,000, and a public utility society, Onslow Village, Ltd., was formed. The Society's own Works Department was organised, and work started by direct labour. The first brick was laid on April 24, and the formal ceremony of laying foundation stones took place on May 1. Since then sewer and surface water drains have been laid, 50 houses are actually in course of erection, and the first two were formally opened on October 30 last.

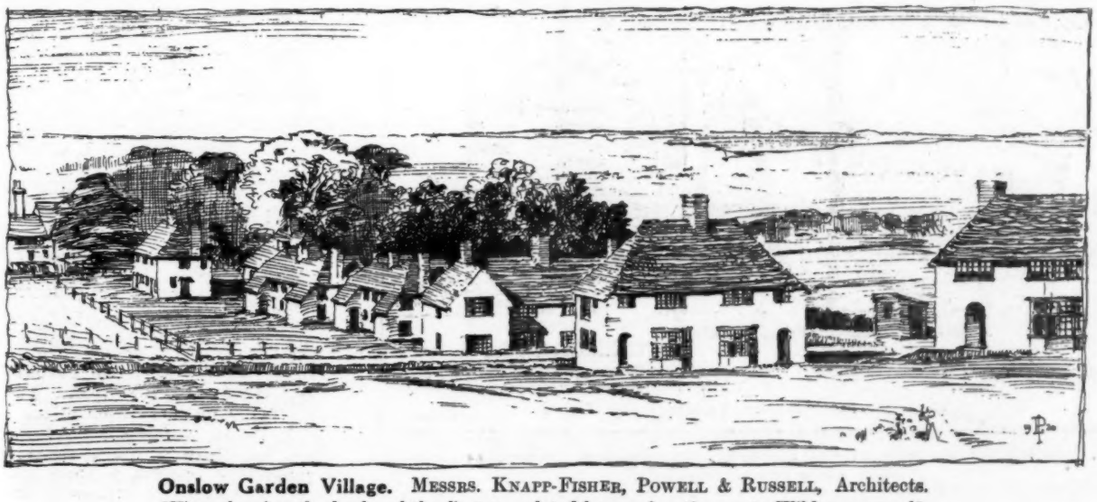
The houses first put in hand are nearly all of the parlour type, containing large living-room, smaller sitting-room, kitchen-scullery, 3–4 bedrooms, bathroom, larder coal-store, etc. Smaller houses are also being built, in the first instance expressly for the use of the workmen engaged on the erection of the village. These contain one large living-room, 2–3 bedrooms, kitchen-scullery, bathroom, larder, coal-store, tool-store, etc. Linen cupboards and other cupboards are provided. Gas stoves are fitted in all kitchen-sculleries, and are so planned that all cooking work may be done out of the living-rooms.

In the general planning of all types of houses the principle kept in view has been that there should be no difference in essentials between the type of house designed for the manual worker and the small house considered suitable for people of the professional classes. In this connection, attention is specially directed to the position of sanitary fittings, arrangement of larder and fuel-store, and planning of the entrance lobby and staircase.

As regards external treatment, efforts are being made to avoid dulness and to obtain a satisfactory general effect by careful grouping and arrangement. The difficult and undulating character of the site makes it impossible to adopt a very formal or symmetrical lay-out, but lends itself to pleasant effects on freer and more natural lines.

Arrangements are being made to start the manufacture on the site of bricks and tiles required for the building work and all the joinery required. Concrete slabs for internal partition walls have been made on the site for several months. The tile and brick works should prove to be a permanent industry of great value, the site providing an abundance of excellent brick-clay. Factory sites, like the brickworks, will be located along the northern boundary of the estate, and will be served by sidings from the L. & S.W. Rly. (Farnham and Alton line), which here skirts the estate. A shopping centre will be provided midway between the station and the Crossways entrance to the village. Sites will be available for small holdings of any size required, on which will be placed houses and suitable farm buildings. The land set aside for this purpose is already developed as farm land, and is of good quality. A portion of the estate, beautifully situated on the Hog's Back and in proximity to the Farnham-road, will be set aside for the purchase of sites by any who wishes to erect houses of a larger type, or to live outside the village itself. The ground here runs from about 300 to 470 ft. above sea level, and the views are very fine. The village will be developed to an average density of not more than 5 houses to the acre, so that there will be an unusually large area of open spaces, and it will be flanked on the west by 300 acres of permanently open agricultural ground. Allotments of ample size will be provided, and special care will be taken to ensure that these are closely adjacent to the tenants' houses.

The architects are Messrs. Knapp-Fisher, Powell & Russell, of 133, Ebury-street, S.W. 1.



Onslow Garden Village. MESSRS. KNAPP-FISHER, POWELL & RUSSELL, Architects.
[View showing the backs of the first completed houses fronting on to Wilderness-road].

THE TOWN-PLANNING INSTITUTE.

THE President, Mr. H. E. Stilgoe, took the chair at the last meeting of the Town-Planning Institute, held at 92, Victoria-street, S.W., when Mr. Thomas H. Mawson read a paper on "A Plea for Imagination."

Mr. Mawson, in the course of his paper, said imagination was that sane faculty of idealism which, compassing the seemingly impossible, aimed at its accomplishment; and whilst doing so had the power of enthusing others with the dream, so that stratum after stratum was permeated with its own white heat of fervour for its realisation. Imaginative work worthy of the name reached beyond the day and the hour, and was, figuratively speaking, for all time. The world was not altogether the prosaic, matter-of-fact place it was pictured to be. There was more of the sublime in it than was generally thought.

A town planner had to assume the rôle of prophet, he had to predicate the growth and expansion of a town fifty or more years in advance. He had to foresee the extension of its manufacture, its shipping, its commerce, its influx of visitors, if it be a health resort, or its facilities for learning if it be a university centre, and sketch out a policy accordingly. It might be objected that no one could see so far ahead, because the conditions of modern life were always changing. Take motor traction and oil fuel travelling as a case in point: no one knew what aerial travel would count for in ten years' time. No one could forecast the force of those cross currents which were agitating public life to-day, but although they modified things somewhat they did not upset the main policy, and yet a man thoroughly imbued with the many-sidedness of civic life would allow for these contingencies and invite them.

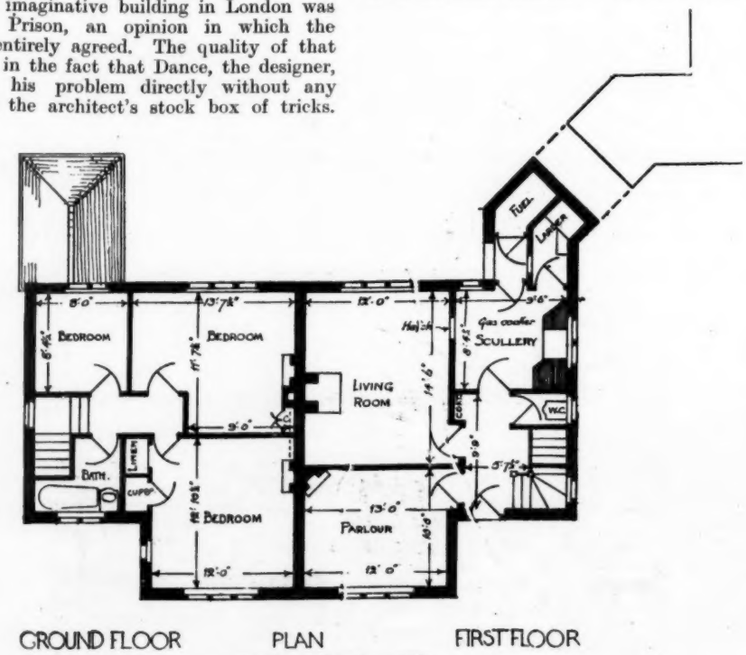
Town planning was such a vast, complicated subject of ways and means, of finance, traffic, railway circulation, such a fight of conflicting parties and temperament, that it was questioned by most whether imagination was likely to be of any value at all; yet, in spite of that, he laid it down as an axiom that unless a town planner had that idealistic imaginative vision, unless he was allured to brighter worlds, his work would never stir a single emotion nor be abiding.

Having discussed what imagination counted for in poetry, in painting and in a garden, Mr. Mawson passed on to the domain of architects. Sir Reginald Blomfield had said the most imaginative building in London was Newgate Prison, an opinion in which the speaker entirely agreed. The quality of that work lay in the fact that Dance, the designer, attacked his problem directly without any aid from the architect's stock box of tricks. He had to build a stern, fortress-like building, an expression of monumental strength, even grim in its brutality, as befitting its purpose. The stern majesty of the law was written upon the building in a way which impressed the imagination, in a way that nothing else he knew did, except several of Piranesi's prison etchings. The sense of prescient, solemn awe overpowered them in both instances and transported them almost to the day of doom. There was nothing of elemental picturesqueness about Newgate or Piranesi's etchings, although the latter perfectly understood the picturesque, as was proved by his imaginative compositions of buildings and landscape in the heroic style. There was not even a tree or monument to relieve the bare, flat street anywhere round the four sides of Newgate, and that was the lesson which he wished to transfer to town planning: that primarily it rested on a basis of sound design and on a practical solution of civic expediencies without extraneous aids from the picturesque.

A practical piece of town planning which stirred his imagination was the ducal crescent at Buxton. Nash's crescent at Bath was another expression of the broader feeling of their Georgian forefathers. To have in a town a level uniform cornice and roof and a row of windows one depth in proper proportion of solid and void, the whole in perfect symmetry and size, was like an interlude of music rhythmic in tune and expressive in time. Perhaps, however, the most imaginative example of town planning which had materialised was Washington.

What of their opportunities of to-day? Never before in the history of the world was there greater need for the "onward looking man" or the man with a vision. By general consent and the logic of hard facts it was now deemed an urgent necessity to provide additional university facilities for London. A university was a typical case in which they could in part estimate, but in which imagination must also play an important part. It was certain, for instance, that they must sooner or later provide for the teaching of subject, which were long overdue, such, for examples as landscape or topographical architecture. A little imagination would show that many other arts and sciences would demand a place in the university system. Already modern university *campi* extended from 45 acres in a small town like Halifax (Nova Scotia) to 120 acres in British Columbia, whilst in many of the American universities they occupied sites of four to eight hundred acres. Notwithstanding that and the certainty of constantly recurring demands for new departments, we were told that the Senate of the London University was seriously contemplating the addition of 11 acres, whilst Alexandra Park, with an area of 150 acres, one of the finest sites for a university in London, or any other city, was available for the purpose. They might not be able to estimate precisely what new subjects might be taught, but they could, by using a little imagination, provide a site adequate for all contingencies. To take another example, the Port of London Authority had for many years past been engaged upon vast schemes for improving the facilities for shipping. Some of those plans provided admirable solutions of the need for greater dock capacity. A very little thought, however, would show that that was only part of a much larger problem, for when the ships had reached their docks their cargoes had to be handled and transported by rail, road, or water, and existing facilities were totally inadequate for the economic handling of additional traffic. Supposing, however, that the dock and transport facilities were brought into some sort of economic relationship, how were they going to provide the housing accommodation for the vastly increased number of dock hands which would be required, seeing that already the dock area was so congested? Only by the exercise of imaginative faculties could they hope to see all the contributory factors in their proper relationship, and so evolve a comprehensive scheme which would meet all the requirements of a well-organised port.

A glaring case in which a little imagination and enterprise might play a noble part was in the solution of London's market problems, and particularly in the selection and development of a new strategical and economic site for Covent Garden Market. If an accurate estimate could be made of the direct loss resulting from excessive and unnecessary haulage charges the amount would be so stupendous as at once to strike British imagination in its most vulnerable part. Another example, much more restricted in its scope, in which imagination supported by a little enterprise might save the country an immense amount of money and time, was the provision of a strategic centre for all the consular and shipping services of London. Taking one more example, in London there was at the present an urgent need for a permanent home for the Trades' Exhibition. The Government and the Overseas Trade Department, having lost the Crystal Palace, were anxiously looking around for a new site. That would demand the long and serious study of the town planner, because the modern exhibition brought into play every principle and canon of art known to the town planner, plus the exercise of all the imagination he could command.



Onslow Garden Village.

MESSRS. KNAPP-FISHER, POWELL & RUSSELL, Architects. (*See* p. 723).

[Parlour and 3-bedroom type of house, specially designed for corner sites where two roads meet.]

DISCUSSION.

His Highness the Rajah of Baroda said he was deeply interested in the subject of town planning, not only from the individual and imaginative point of view, but also from the point of view of practical administration. After learning from Europe, they in India were now gradually taking up the work of improving their towns as well as financial conditions would allow.

Sir Richard Paget, in proposing a vote of thanks to the lecturer, remarked that habit was the greatest enemy in trying to make the world a better place. His view was that the idealist was the only practical man, because he saw what had to be done. It seemed to him that the greater part of town planning did not need to go further than realising the present defects and the power of devising means of remedying those defects to fit their present needs.

Mr. Barry Parker seconded the motion, which was supported by Mr. G. L. Pepler and Mr. Barclay D. Niven, and unanimously carried.

CIVIC SURVEY AND TOWN PLANNING.

ON Wednesday last week the Earl of Plymouth presided over a joint conference of the Royal Institute of British Architects and the Garden Cities and Town-planning Association in the rooms of the R.I.B.A., 9, Conduit-street, W. 1, to discuss the subject of "The Civic Survey, with special reference to town-planning in Greater London."

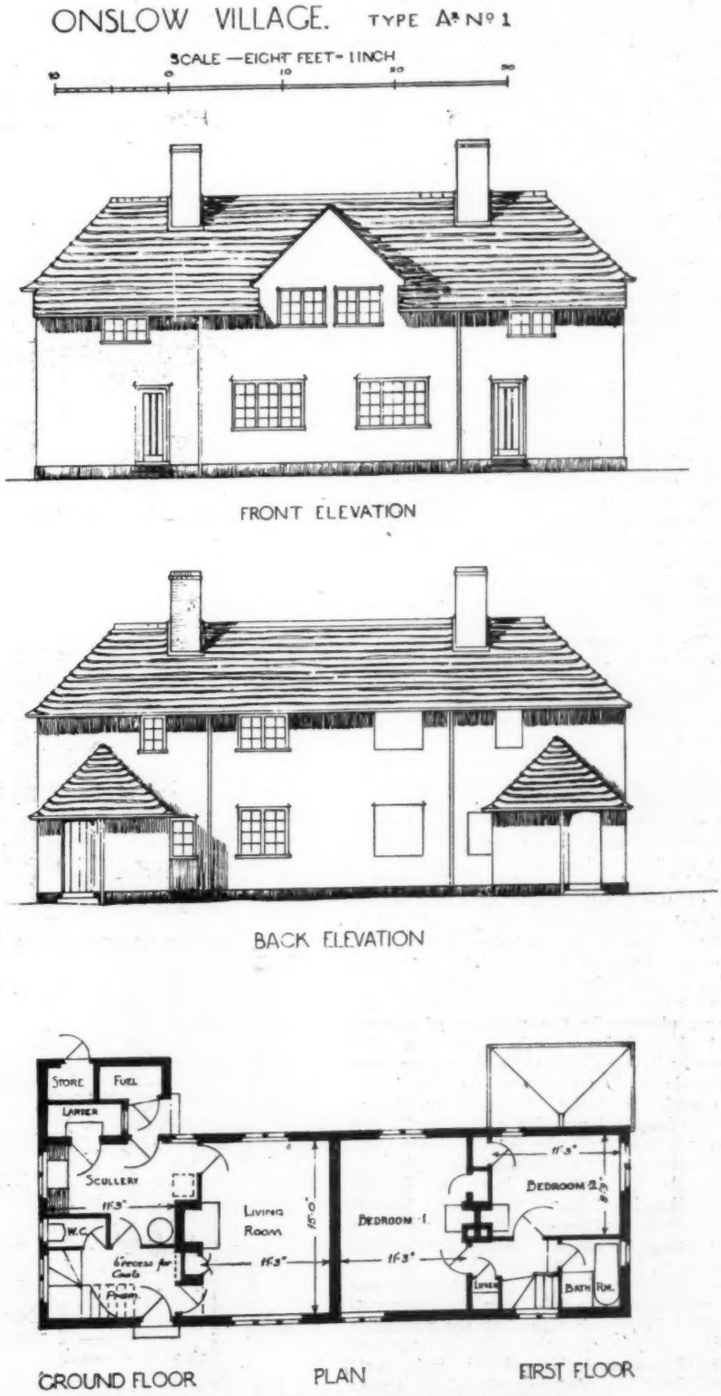
MR. J. W. SIMPSON (President R.I.B.A.), in introducing Lord Plymouth, said civic survey was a new science, which their friend Professor Geddes had a good deal to do with the initiation of. It was a very important subject, and it gave the Council of the R.I.B.A. great pleasure to co-operate in the holding of that Conference.

The EARL OF PLYMOUTH said the planning of the extensions which were necessary around all large centres of population was a work of cardinal importance. It was essential that the authorities who had to deal with the matter should not proceed, as they had in the past, with comparatively small patchwork schemes, but that such schemes should be carefully thought out on a large and comprehensive scale. Municipal authorities throughout the country were alive to the necessity for improved communication into the centres of large cities and towns and to the necessity for providing more and better housing accommodation. Architects and others interested in the question should use all the influence they possessed with a view of encouraging the authorities in all parts of the country to embark on thoroughly sound schemes, bearing in mind future requirements.

PROFESSOR PATRICK ABERCROMBIE, in opening the discussion, after putting in a plea for a more extended study of local geography, said that the citizen, in order thoroughly to understand his city, required a civic survey. Such a survey was not merely required for the experts who were managing the city, but for the citizen himself in order that he might thoroughly understand the nature of the problems the experts were attempting to solve. He considered the work of preparing a civic survey might most profitably be divided. The local authority had the information in regard to population, housing, health, traffic, tramways and other matters of immediate importance for city improvement and development. There were, however, numerous other investigations which were equally necessary if a complete picture was to be presented, and a voluntary civic society or regional association might well undertake that side of the work. In his view the study of civic improvement should begin at school, and he had known of lessons on the general principles of town planning being given at school with great success and effect. There was a good deal to be said in favour of civic societies, or commercial clubs—as had happened in Canada and the United States—putting forward general development plans, either by promoting a competition or appointing a small commission. If the local authority were sufficiently progressive to do that, and to cover the whole field of city life from civic centres to slum clearance and allotment gardening, then the civic society might well direct its energies to educating the general public up to a full appreciation of what civic improvement and town planning meant.

PROFESSOR S. D. ADSHEAD said it seemed that much of the work which could be undertaken under the title of "civic survey" was, for most practical purposes, unnecessary. There was no undertaking in which so many temptations arose to undertake laborious work merely to complete what was, after all, but an artificial schedule. If the preparation of a civic survey was to be of real practical value to the town planner, and no one desired that it should be more than himself, there would have to be a much more careful review, and the least, not the largest, amount of information should be collected, because the preparation of civic surveys such as were undertaken during the war occupied years and were expensive as municipal undertakings. The preparation of a civic survey of some sort was absolutely necessary as the groundwork for a development scheme. Conditions, however, varied in different districts, and the information necessary to be collected varied in like manner. Outside the information that could be collected there were other and more subtle factors to be reckoned with, factors which, after all, were sometimes the most influential and vital. Among those were such questions as the future of motor traffic, the future of electric power, the future of coal mines, and the redistribution of areas of administration, all of which were of vital importance and regional in their distribution, and far too subtle to be dealt with by a graphic survey in patches of colour or red lines.

MR. G. L. PEPLER, dealing with the subject of the civic survey preparatory to "zoning," with particular reference to industry, said that in this country very little "zoning" had been carried out, and, therefore, in view of the compulsory provisions of the Town Planning Act of 1919, and the large number of schemes that must in consequence be undertaken in the near future, careful research was necessary. So far as "zoning" had gone in this country, he thought the matter had been approached rather too much from the point of view of protecting existing residential areas and not enough with a view to increasing industrial efficiency. The following were some of the points it was desirable a civic survey should

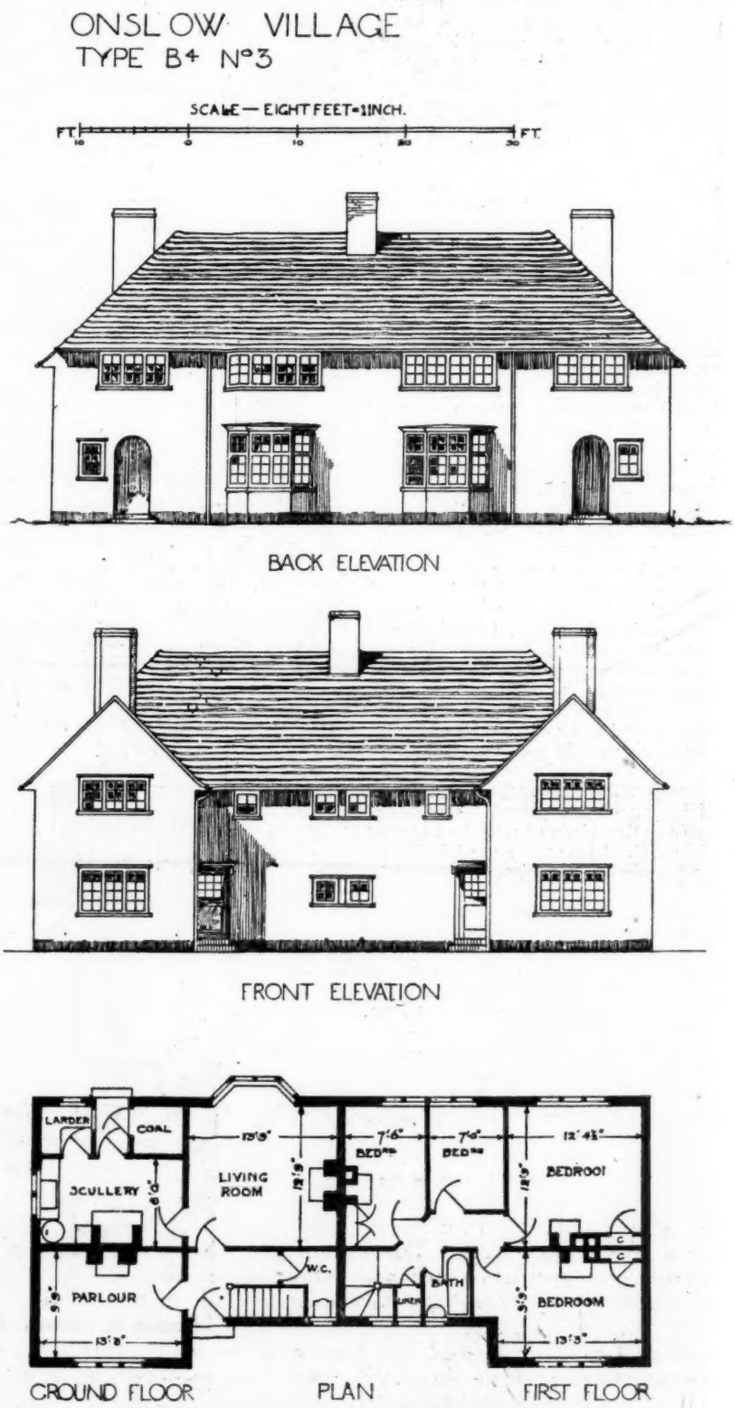


Type "A" No. 1 Houses, Onslow Garden Village.
MESSRS. KNAPP-FISHER, POWELL & RUSSELL, Architects. (*See p.* 723)

cover in order that the industrial side of town planning might be effective: Historical, general contours of the land, geological, meteorological, communications, power and service, prospective industries, labour, housing accommodation, and density of population. The object of town planning, including "zoning," was to prepare a plan directing the development of a town on the most efficient and beneficial lines for many years to come. Absence of that direction had in the past resulted in much waste, extravagance and inefficiency, so that it was clear that a little time and money spent in careful preliminary study would be richly rewarded in assuring the prosperity and well-being of the people. The difficulty with regard to Greater London was that the field to be covered was so vast, and the number of interests to be harmonised so many. A commencement had been made, however, and the arterial road conferences showed that a large measure of agreement was possible. Of recent years there had been a marked tendency for industry to move from Central London to the outskirts, or right away. In particular there had been phenomenal industrial development at Acton, Hayes, Southall, Greenford, &c., where canal accommodation was available and the Great Western Railway could absorb extra traffic and distribute it so widely from the junction at Reading. Also, much land had been taken up for factories on the riverside east of London. On the other hand, nearer the centre there had been a considerable absorption of dwelling-houses by commercial undertakings. Those changes had not followed any definite plan, and what seemed to be required was a careful survey of the evidence of those tendencies of movement in particular directions, so that a plan might be evolved for the whole area to direct wisely the inevitable evolution into the proper channels, and make adequate provision so that the places best suited for the various functions might be used for the purpose.

MR. RAYMOND UNWIN said a civic survey would lay before the town planner in a form easily apprehended the results of a sociological and economic investigation into the conditions and needs of the population, for whose future welfare it was his business to provide. There were certain facts and tendencies in a city which the town planner should realise as fully as possible, and they might be grouped under the following headings: (1) The physical conditions and characteristics of the area, such as the contours of the surface, the character of the soils and subsoils, variations in rainfall, humidity, &c.; (2) the distribution of buildings having different characters and serving different uses—where, for example, industrial, business, and residential areas had defined themselves in the existing town—distribution tendencies indicated by changing characters of districts and the location of new buildings of different kinds which had been erected during recent years; (3) the distribution of open spaces and recreational opportunities; (4) the condition and distribution of the existing population; (5) the movements of the population; (6) distribution of land values. Complete information even under those limited headings would involve the town planner in the mastery of a vast amount of statistics, and in connection with a large city it was clear that unless some easy and graphic method of conveying that information could be devised it would be almost impossible for the town planner to acquire the necessary grasp of all the detailed facts, tendencies and interests which must be considered. For example, he could not learn the density of population in all the different streets, but if a map were put before him in which the density was indicated by degrees of colouring, or, better still, by density of black dots, it became quite easy for him at a glance to see the condition of the whole town and surrounding district in reference to that one particular element. It was desirable that a standard system of representation of the main facts required for town planning should be agreed upon. Wherever the importance of the survey depended upon relative intensity or frequency of any matter, the representation, whether by colouring or by a method of shading, should indicate to the eye as nearly as possible the degrees of intensity. Where the question was one of locality the method of representation should be one which indicated the exact locality as nearly as practicable. With regard to colourings or shadings that were not required to show gradation but were required to show difference of character, the importance there was to secure the general adoption of conventional standards as far as possible, and to make those conventional colourings or hatchings as illustrative as might be of the character to be conveyed. Referring to the suggestions which had been made for relieving the traffic difficulty in London by allowing higher buildings in the central area, he said the condition of the streets and railways in New York and other American cities, where vast numbers of people were turned out at the rush hours from the tall buildings, suggested that great caution should be exercised in adopting that theory in this country. The attempt to relieve the congestion in many American streets by supplementing the underground railways and the road trams by the infernal device of the overhead railway was an expedient which he trusted we should not allow to be driven into this country by the careless adoption of high buildings without first instituting a very thorough survey of the transit conditions which would result therefrom.

DR. GIBBON, of the Ministry of Health, said there was a huge task in front of the local authorities in the provision of houses. In London alone there were contracts out for nearly 27,000 dwellings, but there were not one-quarter enough workmen to build them.



Type "B4" No. 3 Houses, Onslow Garden Village.
MESSRS. KNAPP-FISHER, POWELL & RUSSELL, Architects (*See p.* 723.)

HOUSING AND TOWN-PLANNING NOTES.

Land for Housing.

MR. HOWARD MARTIN, Official Arbitrator under the Acquisition of Land (Assessment of Compensation) Act, 1919, sat at 5, Old Palace-yard, Westminster, last week to hear a claim by the Trustees of the late Sir Charles Seely against the Ministry of Health, in respect of the compulsory acquisition of 45 acres 3 roods 11 perches of land on the Furzedown Estate, Wandsworth, for housing purposes. Mr. J. G. Talbot, K.C., was counsel for the claimants, and Mr. John Maude represented the Ministry of Health, which is acting on behalf of the Wandsworth Borough Council.

Mr. Talbot said the area in question included roads covering over 8 acres. Originally the estate consisted of a mansion house and about 150 acres. About 1905 the process of selling parts of the estate began, and down to 1914 an area of 103½ acres had been sold for a total return of £102,662. Of that area 80 acres were sold wholly undeveloped. The purchaser of one block of 32¼ acres had to surrender 3 acres to the London County Council to be thrown into Tooting Graveney Common on which the land abutted. Notwithstanding that the average price at which the whole of the land was disposed of was £992 per acre, a claim was now put forward of £50,000 for nearly 46 acres, equal to about £1,087 per acre, and counsel submitted that was most moderate. In 1909 an area of 13 acres in the middle of the estate, including the mansion house and its surroundings, were sold to the London County Council for £18,750, or £1,442 per acre. The land now under the consideration of the Arbitrator was developed, and it was no doubt for that reason that the Wandsworth Borough Council—the Ministry of Health acting with and for them—wished to buy it. He submitted that the trustees were entitled to the full building value of the property, and that it would be spoilation to give less than that. The land was valued provisionally under the Finance Act, 1909–10, at £53,917.

Mr. Edward White, a member of the firm of Milner, Son & White, surveyors, of Westminster, said his firm had had the management of the Furzedown Estate for about 20 years. The total expenditure by the trustees had exceeded £18,000, and a fair proportion of that chargeable to the 46 acres in question was £12,437. In addition there was expenditure upon additional roads of which the freehold was still retained by the trustees, but where front land had been sold, the value of that would pass to the purchaser.

Mr. A. L. Ryde, surveyor, of Westminster, gave evidence on behalf of the claimants, and submitted a detailed valuation amounting to £55,157. He valued frontages at amounts varying from £5 to £4 10s. per foot. Most of the back land he valued at £900 an acre; some he valued at £700 per acre.

Mr. F. E. Sargant, District Valuer of the Inland Revenue, on behalf of the Ministry of Health, submitted a detailed valuation of the land amounting to £24,264. He thought that was the fair market value under existing conditions. The net valuation was reached after deferring gross amounts for certain periods on the 6 per cent. basis.

Mr. Talbot, in his concluding address, said the Arbitrator was asked to allow £24,264 for land upon which £12,000 had been spent at the old prices, plus the liability of £5,700 odd in respect of Southcroft-road. Counsel submitted that the cost of providing houses must be fairly met in all directions.

WEEKLY HOUSING RETURN.

Progress of housing up to December 11:—Schemes submitted, 11,408; approved, 8,736. Lay-out schemes submitted, 6,857; approved, 6,289. House-plans submitted, 281,583 houses; approved, 265,576. Tenders submitted, 179,764 houses; approved, 166,471. Contracts have been signed for 133,301 houses.

Schemes dealt with during the week ended December 11:—Schemes submitted, 50. Lay-outs submitted, 41; approved, 54. House-plans submitted, 1,757; approved, 1,487. Tenders were submitted for 1,456 houses, and approved for 2,245. These schemes include the following:—

Applications.

SITES.

URBAN.—Ebbw Vale, 31.79 acres; Northampton, 14.26.

RURAL.—Auckland, 10.22 acres; Llantrisant and Llantwit Fardre, 19.45; Nantwich, 10.5; Rotherham, 12.41.

LAY-OUTS.

URBAN.—Abergele and Pensarn, Battersea, Chingford, Darlaston, Halifax, Oldham, Twickenham, Walsoken.

RURAL.—Barton-upon-Irwell, Clun, Congleton, E. Ashford, Isle of Wight, Kettering, Lichfield, Mutford and Lothingland, Nantwich, Newton Abbot, Ringwood, Spilsby, Thirsk.

COUNTY COUNCIL.—Lancashire.

HOUSE-PLANS.

URBAN.—Battersea, 4 houses; Birmingham, 21; Brecon, 8; Caerphilly, 34; Carmarthen, 24; Chingford, 24; Darlaston, 8; Fulham, 30; Halifax, 88; Kidwelly, 24; Knutsford, 82; Mold, 54; Pontypridd, 200; Southwick, 6; Walsoken, 40; Workington, 593.

RURAL.—Aylesbury, 8 houses; Clun, 4; E. Ashford, 116; Isle of Wight, 16; Kettering, 72; Lichfield, 31; Long Crendon, 4; Meriden, 40; Mutford and Lothingland, 24; Nantwich, 2; Newton Abbot, 6; St. Dogmells, 2; Shipston-on-Stour, 4; Solihull, 30; Thirsk, 7; Thrapston, 8; Wath, 10.

COUNTY COUNCIL.—Lancashire, 16 houses.

Approvals.

SITES.

URBAN.—Congleton, 10.12 acres; Leigh, 11.75; Prescot, 27.83.

RURAL.—Newport (Salop), 15.82 acres; Pewsey, 10.02; St. Mellons, 12.32.

LAY-OUTS.

URBAN.—Abergele and Pensarn, Darlaston, Halifax, Heage, Mold, Walsoken.

RURAL.—Ashby-de-la-Zouch, Barton-upon-Irwell, Bingham, Clun, Congleton, Durham, E. Ashford, Lichfield, Mutford and Lothingland, Nantwich, Norham and Islandshires, Spilsby, Ulverston, Uppingham, W. Ashford.

COUNTY COUNCILS.—Hertfordshire, Lancashire, Yorkshire (E. Riding).

HOUSE-PLANS.

URBAN.—Beckenham, 54 houses; Birmingham, 21; Brecon, 8; Caerphilly, 150; Carmarthen, 24; Darlaston, 8; Harrogate, 4; Heage, 22; Llanfrechfa Upper, 60; Mold, 54; Pontypridd, 200; Saddleworth, 4; Southwick, 6; Stratford and Wolverton, 44; Walsoken, 40; Wigton, 46.

RURAL.—Ashby-de-la-Zouch, 100 houses; Clown, 32; Clun, 4; Congleton, 2; E. Ashford, 136; Kettering, 72; Lichfield, 31; Llanelly, 14; Meriden, 40; Mutford and Lothingland, 24; Nantwich, 2; Narberth, 10; Norham and Islandshires, 14; Rotherham, 40; Shipston-on-Stour, 4; Solihull, 30; Tadcaster, 24; Ulverston, 2; Wath, 10; W. Ashford, 12.

COUNTY COUNCILS.—Hertfordshire, 9 houses; Lancashire, 18; Yorkshire (E. Riding), 2.

Tenders Approved.

URBAN.—Bristol, 26 houses; Bromborough; 4; Caerphilly, 160; Eston, 214; Feltham, 50; Fleet, 6; Golborne, 48; Harrow-on-the-Hill; 54; Haslemere, 10; Ipswich, 14; Looe, 8; Nantyglo and Blaina, 50; Newquay, 4; Pontypridd, 200; St. Helen, 202; St. Ives, 36; Shaftesbury, 16; Sunderland, 613; Tiverton, 14; Totnes, 24; Wallasey, 56; Woodstock, 8;

RURAL.—Barnard Castle, 16 houses; Bodmin, 6; Brailes, 10; Calne, 4; Chesterton, 6; Chorley, 36; Clown, 32; Gloucester, 2; Liskeard, 2; Llanelly, 14; Lutterworth, 4; Newbury, 14; Newton Abbot, 5; Salisbury, 26; Shardlow, 26; Sleaford, 6; S. Molton, 12; Thirsk, 2; Wakefield, 26; Wellingborough, 8; Wellington (Soms.), 14; Winchcombe, 2.

Onslow Village Sign. (*See page* 723.)

[The site of the village was from about the middle of the 12th century a Royal Chase, and the sign shows a King riding out to hunt flanked by two garden village houses.]

CENTRAL HEATING AND VENTILATION.—VIII.

By A. J. WELLS.

STEAM OR VAPOUR HEATING

THE ordinary two-pipe method of steam heating has not met with very great success in this country; it might even be suggested that it has done more harm than good to the progress of central heating by steam. Although the majority of unsuccessful installations are directly due to the designer ignoring the physical laws of nature, or trying to alter them to suit his own purpose, sometimes the defect is due to the ignorance of the operator. The chief fault with the ordinary two-pipe system is caused by the steam getting into the return line and causing trouble by short-circuiting, water-hammer, etc. Theoretically, the pipes should be so calculated that each radiator receives just the quantity of steam it can condense, no more or less. This, like other theories, looks well on paper, but does not work out well in practice. It is found in practice that if a radiator valve is shut off a vacuum is produced by the steam condensing within the radiator before the air-valve has time to operate. This vacuum is sometimes sufficient to draw the steam from the return main into the radiator, so that the radiator remains hot even when the control valve is closed. If the return from the radiator is sealed by a water column, then for the same reason the water may be drawn from the condense main and, therefore, from the boiler. If the boiler is provided with an automatic feeder, so that the water level is kept at a predetermined minimum, the loss of water from the boiler will cause the feeder to work, and when the air-valve has had time to operate, the water will return and probably flood the boiler. To overcome these difficulties the radiators on an ordinary two-pipe system are sometimes provided with two valves, one on the flow and one on the return, so that both must be shut off when no heat is required from the radiator. This causes other complications, because it is difficult to get the average person to operate one valve, let alone two. When heat is required again, the operator probably only turns on one valve. If it is the return valve the radiator will not heat; if it is the flow valve, knocking or water-hammer will result from the condense water being unable to flow away.

The modern vapour system, however, is provided with a device on the return connection of each radiator which allows the air and water to pass into the condense main, but prevents the steam from leaving the radiator. It is obvious that this is a great improvement, because not only does it prevent the steam from entering the condense main, but also permits the radiator to be regulated and controlled by one valve only.

There are numerous systems of this type on the market, especially in America, where central heating by steam or vapour is extensively adopted; they are known by many fancy names, such as "vacuum-vapour," "thermo-grade," "modulated" systems, etc. Some are very effective and worthy of notice, but the majority simply burden the owner with a large number of patented fittings and devices, serving no purpose other than requiring the constant attention of a skilled mechanic. The aim of the designer should be to provide effective heating with a fool-proof apparatus, and the less fittings employed that require handling by the operator the less chance there is of the system failing or causing dissatisfaction on the part of both owner and contractor. For a small installation the operator should only be expected to stoke the boiler and glance occasionally at the water level, and the occupant of a room should only have one quick-turn valve to operate for each radiator.

It would be a good scheme for heating engineers to impress upon the public that a valve is placed on a radiator to control it, and not as an ornament. They should also be convinced that it is not a criminal offence to turn on or shut off when necessary the control valves on the radiators in restaurants, hotels, clubs, etc. There are far more complaints from over-heating of rooms by the central apparatus, both water and steam, than from insufficient heating; one often hears sane common-sense business men at their club complain very emphatically of the high temperature of the room, and yet make no attempt to shut off the radiator valve close by. The time to complain and grumble is when the installation is incapable of producing the desired temperature.

The radiators on the modern vapour system can be controlled for various average rates of emission just the same as hot-water radiators, providing the system is designed so that there is very little pressure difference between the two sides of the valve. If the pressure difference is high, then no control will be possible, because even if the valve is almost closed there will be sufficient steam passing to fill the radiator; and, further, an objectionable hissing noise will be noticeable. If the system has been correctly designed, it should be possible by regulating the valve to heat only one-half or one-quarter of the radiator, as desired. If a constant temperature is required in a room irrespective of external conditions, then each radiator or group of radiators should be controlled by a thermostat, operated electrically or by compressed air. This device shuts off the valve when the temperature of the room attains a predetermined maximum and opens the valve when the temperature has reached a predetermined minimum. In this country, where the external conditions are so variable, it is desirable to have this automatic control, not only for the sake of comfort, but also for economy in the consumption of fuel.

Apart from the boilers, pipes and radiators, it is essential that the system should be provided with reliable and efficient steam traps or air and water relief valves. These should be fixed at each point where it is desirable to prevent the flow of steam but allow the air and water to pass. Also, the boiler should be provided with a reliable and sensitive pressure regulator, operating the draught chambers both back and front. The regulator should be capable of preventing the steam from attaining a pressure greater than that assumed for the calculation of the resistances.

In the boiler room or other convenient position an air valve or air and water separating tank should be fixed so that the air can escape from the system without holding up any of the condense water. If it is impossible to provide for a water column equivalent to the pressure in the boiler without flooding the air valve or separating tank, then a special return trap must be provided on the condense main near the boiler, which returns the condense water to the boiler and prevents the pressure from the boiler entering the return main. By this means the boiler can be worked at 5 lbs. per sq. in. pressure, while the condense main remains at atmospheric pressure. The piping calculations are the same for the vapour system as for the ordinary two-pipe system, and the apparatus should be so designed that the resistance offered by the pipes to the flow of steam from the boiler to any radiator is the same. This will ensure the installation heating equally all over. The condense mains should be large enough to allow both the air and condense water to flow easily to the separating tank, and the diameters will depend upon the quantities flowing in a unit of time and the fall of the pipe from the horizontal.

The boiler must be capable of generating sufficient steam to provide for the maximum emission or heating-up period. When all the condense water is returned, so that very little "make-up" water is required, then the cast-iron sectional boilers of good design offer the best advantages; but when the condense is unavoidably wasted, as in cooking and laundry work, and a considerable quantity of "make-up" water is necessary, the wrought iron tubular boiler provided with mud and man-holes should be used, the type depending upon the pressure required.

Central Heating and Power Supply Station.

We have received the following communication from Mr. L. E. Wheble:—

"SIR,—Would it be possible to get the opinion of your readers respecting the following scheme?

"Why not have a hot-water central heating and power supply station for all London, so that all houses could eventually be supplied with hot-water and steam (as well as cold water direct from the main) for heating, drinking and other purposes? Drinking water could be purified by means of a special tap I have in view.

"In connection with the new housing schemes which will probably be carried out in the near future, it would materially assist in lessening the cost, as no chimneys would be required, but only ventilating flues or shafts, as (instead of coal fires) radiators, &c., could be used either on meter register, heating capabilities, or other system of charging. It would, I believe, greatly reduce the cost of maintenance of premises, and would assist to delay the ruin and deterioration that is going on through the fumes of London. Also it would practically make coal a minor necessity, and so assist in decreasing the cost of industrial manufacturing by cheapening coal.

"It could be arranged to be carried out on a good, sound financial basis, and the question of the initial outlay could be overcome."

[Lighting and heating from a central source is not a new idea; the method having been used with considerable success in the United States, and known as the "combination" system. If the power plant is large enough the heating supply is more or less a by-product, because the latent heat in the exhaust steam is employed and supplemented when necessary by live steam. By this method the heat sales, after paying for maintenance, depreciation, &c., will help to pay for the fuel consumed in generating power and thus reduce the cost of electricity. There would be no need to provide separate mains for both heating and domestic hot water, because small calorifiers could be placed in each group of residences and the domestic water heated from the heating main. There would be no greater difficulties to overcome in providing pipes to convey hot water or steam than are at present experienced in laying mains for supplying gas or cold water, although the district should be residential and fairly compact because long runs of pipes do not tend towards economy. In industrial quarters consisting of large buildings and factories it is generally found to be cheaper to provide an independent plant for each building. The system could certainly be adopted with success in the new housing schemes, but it is extremely difficult to convince public bodies that the extra expenditure is justifiable. Some of these bodies appear to be convinced of the desirability of such a system but are very dubious concerning the extra outlay, and coupled with this is the fact that to many the system is entirely new and they are ignorant of its success elsewhere; it would, therefore, be far more difficult to obtain the necessary finance than our correspondent imagines. The subject is very interesting and provides food for serious thought, but the great obstacle retarding the progress of such schemes is the difficulty in obtaining the initial outlay.—ED.]

Stained Glass from Kirkham Abbey.

Col. E. H. Clough-Taylor, of Firby Hall, has presented to the Yorkshire Philosophical Society some fragments of fourteenth century stained glass from the ruins of Kirkham Abbey. Some of the specimens are an eighth of an inch thick, and are quite opaque, though the design is very clear and the painting in good preservation.

THE BUILDING TRADE.

CHEMISTRY AND PHYSICS RELATING TO BUILDING PROBLEMS.

THE second of the series of lectures on building science was given at the Northern Polytechnic Institute on November 25, by Mr. T. J. Drakeley, M.Sc., A.I.C., F.C.S., A.M.I.M.E., Head of the Chemical Department. The lecture was entitled "The Gases of the Atmosphere," and was illustrated by a large number of experiments. The effect of the various gases of the atmosphere on building material was mentioned, and the importance of ventilation was demonstrated.

In the course of his lecture, Mr. Drakeley said air consisted of a mixture of nitrogen and oxygen, together with smaller quantities of other gases, and its average composition might be taken as follows (Newth):—

	Vols. per 1,000
Nitrogen	769.5000
Oxygen	206.5940
Aqueous vapour	14.0000
Argon	9.3700
Carbon dioxide	0.3360
Hydrogen	0.1900
Ammonia	0.0080
Ozone	0.0015
Nitric acid	0.0005

NITROGEN.—Nitrogen was a colourless gas, without taste or smell. It would not burn or support combustion or life. Four-fifths of the atmosphere was nitrogen, and, although it was not a supporter of life, it was non-poisonous. It was very inert, and could only be made to combine with oxygen by the high temperature of the electric spark. Hence, during a thunderstorm the lightning caused the nitrogen and oxygen to combine and as a result the rain was found to contain traces of nitric acid.

OXYGEN.—One-fifth of the atmosphere was oxygen, and this gas supported both life and combustion. An atmosphere might become irrespirable owing to the presence of gases which exerted a poisonous action on the human system, or to a deficiency of oxygen caused by the dilution of the air by a non-poisonous gas, such as nitrogen or carbon dioxide. The effect of a deficiency of oxygen on the human system was given by Haldane and Smith thus:—

Reduction of Oxygen Content to	Effect.
12 per cent. ..	Respiration becomes deeper.
10 „ ..	Respiration becomes distinctly deeper and the colour of the lips is slightly blue.
8 „ ..	No distress felt, but face becomes leaden in hue.
5–6 „ ..	Panting ensues, confusion of mind, and loss of power over limbs.
1–2 „ ..	Loss of consciousness in 40–50 seconds without warning. Convulsions. Death.

The customary method of testing whether an atmosphere was unsafe was to lower a candle flame into the air, and it was therefore of interest to note when the flame was extinguished. The composition of extinctive atmospheres is given by Clowes thus:—

Extinctive atmosphere.	Oxygen per cent.	Nitrogen per cent.	Carbon dioxide per cent.
Air in which candle has just been extinguished ..	16.05	80.80	3.15
Mixture of air and nitrogen ..	16.04	83.6	—
Mixture of air and carbon dioxide..	18.04	67.94	14.00
Air expired from lungs	16.15	79.9	3.95

For the purposes of comparison, the composition of the air expired from the lungs was given in the table, and from the results it was obvious that in the absence of poisonous gases the extinction of the candle flame occurred long before the air became dangerous. Hence, if the candle continued to burn the air might be assumed to be safe.

AQUEOUS VAPOUR.—Air usually contained moisture. On cooling the air, that moisture settled out as dew, or, if the temperature were low enough, as hoar frost. The presence of moisture in the air influenced the rate at which mortar set. If the air was saturated, a fat lime mortar would not form a hard mass, and, consequently, it should not be used in wet places such as damp cellars, &c., where drying was impossible. In that connection, it should be observed that such limes as hydraulic limes, which set in moist places, were from a chemical point of view classed with cements. It was little appreciated that moisture had a definite influence on the strength of building stone. In a series of experiments, the following results were obtained for various stones (Baldwin-Wiseman and Griffiths):—

Stone.	Compressive Strength (lbs. per sq. in.) Dry.	Wet.
Red granite	5,480	5,100
Limestone (Portland) ..	4,080	2,960
Hard sandstone (Daresbury)	2,020	1,750
Soft sandstone (Daresbury)	900	400

CARBON DIOXIDE.—The percentage of carbon dioxide in the air was liable to considerable variation. Average air contained about 0.03 per cent. of that constituent. The processes of respiration, combustion and putrefaction were attended by the evolution of carbon dioxide, and, therefore, in a badly-ventilated or crowded room, the amount of carbon dioxide might rise to 0.3 per cent. The final hardening of fat lime mortar was due to the absorption of carbon dioxide by the lime, and it was shown that in the absence of carbon dioxide such mortars did not harden. Carbon dioxide was a heavy gas, and tended to collect in wells, &c. It was, however, non-poisonous, and acted mainly as a diluent. Therefore, if the candle continued to burn in an atmosphere containing more than the normal quantity of carbon dioxide, it would also be safe for respiration if no poisonous gases were present. Carbon dioxide was a gas which did not burn or support combustion, and the formation of that gas by chemical means was utilised in many fire extinguishers.

AMMONIA.—Ammonia was derived from the decomposition of nitrogenous organic matter. The quantity of ammonia in the air of various towns was given as follows (Newth):—London, 0.05 grams per 1,000 grams of air; Glasgow, 0.06 grams per 1,000 grams of air; Manchester, 0.10 grams per 1,000 grams of air. Ammonia was very soluble in water, and consequently rain water always contained small quantities of that substance. The lecturer made an experiment to show that that powerfully-smelling gas was most readily absorbed by charcoal. That peculiar property of charcoal was sometimes utilised by placing the material over the mouths of drains to absorb any noxious gases that might be evolved. Incidentally, charcoal also removed colouring matter from water, and similarly porous substances, as clinker, coke, &c., were often used in sewage purification.

NITRIC ACID.—Nitric acid was produced in the air from nitrogen and oxygen whenever a flash of lightning passed through the atmosphere. During a thunderstorm the rain contained traces of nitric acid, which readily attacked limestone buildings.

The other gases mentioned in the list were of less importance from a building point of view. However, other gases occurred in even smaller quantities, which were of importance.

HYDROGEN SULPHIDE.—This gas was produced by the incomplete combustion or decomposition of carbonaceous substances which contained sulphur. It was a poisonous gas, with a very objectionable smell. A small proportion of hydrogen sulphide occurred in coal gas, and had an injurious effect upon lead paints, which were rapidly blackened. The white lead was converted into a black substance, known as lead sulphide. The restoration of the white colour was not worth effecting for ordinary paint work, but was a most important operation when valuable artistic work was under consideration. The usual method employed was to treat the surface of the painting with hydrogen peroxide, which converted the black lead sulphide into white lead sulphate. In rooms where large quantities of hydrogen sulphide were prepared (such as chemical laboratories) it was imperative that a paint should be used which contained no lead compounds.

LABOUR IN THE BUILDING INDUSTRY.

THE offer of the Government to the building trade unions respecting the admission of ex-Service men into the building industry is in the following terms:—

(1) In return for an undertaking to admit and train not less than 50,000 ex-Service men, the Government will make a training grant to the unions of £5 per man admitted—£2 on admission and £3 on completion of training.

(2) Subject to the same condition, the Government accept the principle of a guaranteed rate of pay for time lost owing to inclement weather, to be applied on the following basis: (*a*) For time lost up to twenty-two hours per week, 50 per cent. of time rate to be paid: (*b*) For time lost in excess of twenty-two hours, 75 per cent. of time rate to be payable.

These proposals were submitted to Mr. George Hicks, President of the National Federation of Building Trade Operatives on Saturday last, who, in reply, said he was taking steps to summon together the Committee of the Federation to consider the matter. It is understood that it was found impossible to call the Committee together this week, and that it will meet next week.

In the course of a discussion on the subject in the House of Commons on Tuesday last, Lieut.-Commander Young said the offer of a bonus of £5 per man for admission to the building industry was nothing but blackmail, and he hoped it would not be accepted. Lieut.-Col. Hurst said he hoped if the trade unions did not accept the offer the Government would itself train the ex-Service men.

Mr. Lloyd George said he could not help thinking that the building trade unions were taking up an attitude which was unjustifiable, selfish, and almost cruel. If the unions were disinclined to accept the scheme the Government would have to fall back upon other methods. The Government was anxious to meet the legitimate apprehensions of those engaged in the building trade. It realised that unemployment was heavier in that trade than probably in any other trade, and the Government was perfectly prepared to do everything in its power to give them reasonable security. But they must take some of the risks. The building industry could not be guaranteed for all time against any risk of unemployment while every other trade in the country had not been so guaranteed.

Mr. R. Coppock, of Manchester, has been appointed General Secretary of the National Federation of Building Trade Operatives, in succession to the late Mr. Bradshaw.

THE CARPENTERS' COMPANY: TRADES TRAINING SCHOOLS.

THE Trades Training Schools, conducted by the following City Guilds—The Carpenters, Glaziers, Joiners, Paint-stainers, Plasterers, Tylers and Bricklayers, and Wheelwrights—held their prize distribution at the Carpenters' Hall, London Wall, on Thursday last week. The Master of the Carpenters' Company (Mr. William J. Minn) was in the chair.

In reading the Twenty-seventh Annual Report, Sir Banister Fletcher, F.R.I.B.A., Director of the Schools, stated that the staff were no longer struggling with uncertain and reduced attendances, and they could look back on a period of definitely successful work and of unprecedented numbers of students. This experience alone fully justified the Worshipful Company of Carpenters in having carried on in times of war, because the schools were now placed in a thorough working condition, enabling them to cope with the excess of eager learners. Additional evening classes had been started, notwithstanding which many desirous of admission had to be turned away. In the Life Class the Prix de Rome Scholarship of £250 per annum, tenable at the British School at Rome for three years, was won by Mr. A. F. Hardiman.

Following the distribution of prizes, Mr. Neville Chamberlain, in the course of an address, said no one who had had the opportunity of walking through the Training Schools in Great Titchfield-street could doubt that the wealth of this country was being used to-day for a noble purpose. "As I passed through that busy beehive of industry," he said, "two things impressed me; one was the great pressure upon your space, and that if you had double the room you could fill it. If men who have already done a full day's work are ready to spend in those workshops two or three hours, which might have been devoted to social amusement, you must be supplying a great demand. The other was that the students there are not schoolboys learning the rudiments of their trade; they are engaged in trade themselves, and they want to know more about the higher branches of it, the processes, and to see all that there is to be seen. I am told that your students are not infrequently able to earn higher wages by reason of the instruction obtained in your workshops—industry certainly deserves that reward. We have arrived at a somewhat critical time in our industrial history. We have crowded into these last few years a development of ideas which perhaps in past times would have taken a whole generation. We find to-day a totally different attitude of mind that is not confined to one class alone, but is to be found in all branches and all classes concerned in industry. We find on the part of the workers not merely a desire for better conditions and for a larger share of the surplus, but they want to be recognised as human beings and to have some voice in determining the conditions under which so much of their lives are spent. On the other side, there is a general recognition of the employer that these aspirations are just and right, and a wish that they may be granted as far as possible, without injuring the various industries upon which this country depends. We are passing through a period of depression in trade which is already serious, and which appears to be increasing every day. For the ideal solution we have to go back to the spirit of the old City Guilds when each industry was self-contained and felt it its duty to care for those in times of stress who had carried it on in times of prosperity." In addressing himself especially to the students, he urged them to work conscientiously and to encourage a habit of doing the best work. He congratulated them upon what had already been achieved, and hoped that every one of them would be prompt and ready to seize the opportunity for advancement when it came, and to make the most of it.

A vote of thanks was passed to Mr. Neville Chamberlain, and the proceedings terminated.

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the building trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur :—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' Labourers.	Bricklayers' Labourers.	Plasterers' Labourers.
Aberdare	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Accrington	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½		
Altrincham	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½		
Ashton-under-Lyne	2/4	2/4	2/4	2/4	2/4	2/5	2/4	2/0–2/0½		
Barnsley	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Barrow-in-Furness	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½		
Barry	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Bath	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Bedford	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Birkenhead	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0½		
Birmingham	2/4	2/4	2/4	2/4	2/4	2/5	2/4	2/1		
Bishop Auckland	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Blackburn	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½		
Blackpool	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½		
Bolton	2/4	2/4	2/4	2/4	2/4	2/3	2/4	2/0–2/0½		
Bournemouth	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Bradford	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Bridgwater	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/7½		
Brighton	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Bristol	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Burnley	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½		
Burton-on-Trent	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½		
Bury	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½		
Cambridge	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Cardiff	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Chatham	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8		
Chelmsford	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Cheltenham	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Chester	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½		
Chesterfield	2/4	2/4	2/4	2/4	2/4	2/–	2/4	2/1		
Colchester	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Coventry	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Crewe	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/10½–1/11		
Darlington	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Derby	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Doncaster	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Dudley	2/2½	2/2½	2/2½	2/2½	2/2½	1/10½	2/2½	1/11½		
Durham	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
East Glam. and Mon. Valleys	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Exeter	2/–	2/–	2/–	2/–	2/–	2/–	1/11	1/9		
Folkestone	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8		
Gloucester	2/–	2/–	2/–	2/–	2/–	2/–	1/11	1/9		
Grantham	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½		
Grays	2/4	2/4	2/4	2/4	2/4	2/4½	2/3	2/1		
Grimsby	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Great Yarmouth	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8		
Guildford	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8		
Halifax	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Harrogate	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Hartlepools	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Hastings	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8		
Hereford	2/–	2/–	2/–	2/–	2/–	2/–	1/11	1/9		
Huddersfield	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Hull	2/4	2/4	2/4	2/4	2/6	2/6	2/4	2/1		
Ipswich	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Lancaster	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½		
Leamington Spa	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½		
Leeds	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Leicester	2/4	2/4	2/4	2/4	2/4	2/4½	2/4	2/1		
Lichfield	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½		
Lincoln	2/4	2/4	2/4	2/4	2/4	2/–	2/4	2/1		
Liverpool	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0½		
Llanelly	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
London	2/4	2/4	2/4	2/4	—	2/4½	2/3	2/1		
Loughborough	2/4	2/4	2/4	2/4	2/4	2/4½	2/4	2/1		
Luton	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Maidstone	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8		
Manchester	2/4	2/4	2/4	2/4	2/4	2/3	2/4	2/0–2/0½		
Mansfield	2/2½	2/2½	2/2½	2/2½	2/2½	2/3	2/2½	1/11½		
Merthyr Tydfil	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Middlesbrough	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Newcastle-on-Tyne	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Newport, Mon.	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Northampton	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½		
Norwich	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Nottingham	2/4	2/4	2/4	2/4	2/4	2/4½	2/4	2/1		
Oakham	2/1	2/1	2/	2/1	2/1	2/1	2/1	1/10		
Oldham	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½		
Oxford	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Plymouth	2/1	2/1	2/1	2/1	2/1	2/1	2/–	1/10		
Pontypridd	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Portsmouth	2/–	2/–	2/–	2/	2/–	2/–	2/–	1/9		
Preston	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½		
Reading	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Rochdale	2/4	2/4	2/4	2/4	2/4	2/5	2/4	2/0–2/0½		
Rochester	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8		
Rugby	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½		
St. Albans	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/8		
St. Helen's	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½		
Scarborough	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½		
Sheffield	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Shrewsbury	2/2½	2/2½	2/2½	2/2½	2/2½	1/10½	2/2½	1/11½		
Southampton	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Southend-on-Sea	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/11½	1/9		
Southport	2/4	2/4	2/4	2/4	2/4	2/–	2/4	2/0–2/0½		
South Shields	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Stockport	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½		
Stockton-on-Tees	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Stoke-on-Trent	2/2½	2/2½	2/2½	2/2½	2/2½	1/10½	2/2½	1/11½		
Stroud	2/–	2/–	2/–	2/–	2/–	2/–	1/11½	1/9		
Sunderland	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Swansea	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Taunton	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Torquay	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Wakefield	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Walsall	2/2½	2/2½	2/2½	2/2½	2/2½	2/3½	2/2½	1/11½		
Warrington	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½		
West Bromwich	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Wigan	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½		
Windsor	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Wolverhampton	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/10½		
Worcester	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½		
York	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½		

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number. Contracts iv; Competitions iv; Public Appointments liv; Sales by Auction lvi. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, &c., may be obtained.

BUILDING AND PAINTING.

DECEMBER 27.—**Middleton.**—HOUSES.—Erection of 64 houses, for the T.C. Borough Engineer, Town Hall, Middleton, Lancs. Deposit, £2 2s.

DECEMBER 27.—**Paisley.**—HOUSING.—For carrying out Whitehaugh Housing Scheme, for the T.C. Master of Works, 13, Gilmour-street, Paisley.

DECEMBER 27.—**Whifflet.**—STATION BUILDINGS.—Reconstruction of Whifflet High-Level Station Buildings, for the Caledonian Railway Co. Engineer, Buchanan-street, Glasgow. Deposit £2 2s.

DECEMBER 28.—**Edinburgh.**—WORKSHOPS.—Construction of Workshops on Bellevue Park, for the T.C. Mr. John Stewart, Executive Officer, Education Offices, Castle-terrace, Edinburgh.

DECEMBER 28.—**Manchester.**—WALL.—Pulling down and setting back to the improved building line of the stone boundary wall at St. Mary's Church, Upper Moss-lane, for the T.C. City Surveyor (Improvement and Buildings Department), Town Hall, Manchester. Deposit £1 1s.

DECEMBER 28.—**Stevenage.**—HOUSES.—Erection of 12 houses in Walkern-road, and eight houses in Haycroft-lane, for the U.D.C. Mr. Wm. Onslow Times, Clerk to the Council, Council Offices, Stevenage, Herts. Deposit £2.

DECEMBER 29.—**Birmingham.**—HOUSES.—Builders and contractors desirous of tendering for erection of houses on various sites are requested to send their names to Mr. Frank T. Cox, Housing Director, City of Birmingham, Moat-lane, Birmingham.

DECEMBER 29.—**Denton.**—HOUSES.—Erection of twenty-four houses on the Haughton Hill Estate, for the T.C. Mr. John B. Cooke, Surveyor, Town Hall, Denton. Deposit, £1 1s.

DECEMBER 29.—**Haltwhistle.**—HOUSES, &c.—(1) The construction of new sewers and roads on the Greencroft Estate; (2) erection of 139 houses, for the R.D.C. Mr. R. E. Hastewell, architect, Westgate, Haltwhistle.

DECEMBER 29.—**Kensington.**—DEMOLITION.—Demolition and excavation of the site in connection with the extension of the Savings Bank, Blythe-road, West Kensington, for H.M. Commissioners of Works. The Director of Contracts, H.M. Office of Works, Storey's-gate, S.W. Deposit, £1 1s.

DECEMBER 29.—**Stirling.**—SCHOOL.—Erection of primary school for the accommodation of 500 pupils, at Cow Park, Stirling,; the building throughout to be of the wood-framed, hollow-walled, and harled type, for the Stirlingshire E.C. Mr. John Marshall, Education Officer, 14, Victoria-place, Stirling.

DECEMBER 30.—**Chester.**—CONVERSION.—Converting administrative block of poor-law institution into nurses' home, for the Board of Guardians. Messrs. J. H. Davies & Sons, 14, Newgate-street, Chester.

DECEMBER 30.—**Llantrisant.**—REPAIRS.—Repairs to be executed at Nos. 271, 273 and 275, High-street, Gilfach Goch, for the R.D.C. Mr. Thomas Saunders, Surveyor, Council Offices, Pontyclun. Deposit, £1.

DECEMBER 31.—**Bermondsey.**—HOUSES.—Erection of three cottages in Orange-place, Lower-road, Rotherhithe, for the B.C. Mr. Fredk. Ryall, Town Clerk, Town Hall, Spa-road, S.E.16. Deposit, £2 2s.

DECEMBER 31.—**Cottingham.**—HOUSES.—Erection of 36 houses on land adjoining Southwoods-road, for the U.D.C. Mr. H. Andrew, Custom House Buildings, Whitefriargate, Hull. Deposit £4 4s.

DECEMBER 31.—**Dartford.**—Estimates, designs, and particulars are invited for the erection of a memorial cross in Scotch granite. Mr. S. Martin, Hon. Sec., "The Dees," Watling-street, Dartford, Kent.

DECEMBER 31.—**Frome.**—HOUSES.—Erection of 6 houses at Beckington, 2 at Rudge, 5 at Buckland, 8 at Faulkland, 6 at Leigh-on-Mendip, 6 at Nunney, and 4 at Rode, for the R.D.C. Mr. J. A. Benyon, architect, Nunney-road, Frome.

DECEMBER 31.—**Howden.**—HOUSES.—Erection of three pairs of houses, at Broomfleet, E. Yorks, for the R.D.C. Mr. Stephen Piper, architect, Market-place, Howden. Deposit, £1 1s.

DECEMBER 31.—**Macclesfield.**—ADDITION.—Erection of new classroom building, &c., at the County High School for Girls, Macclesfield, for the Chester C.C. Mr. H. Beswick, County Architect, Chester. Deposit, £2 2s.

JANUARY 1, 1921.—**Newmarket.**—HOUSES.—Erection of six houses at Lode, for the R.D.C. Mr. S. J. Ennion, Clerk, Deva Chambers, Newmarket. Deposit, £2 2s.

JANUARY 1.—**Portrush.**—GENERATING STATION.—Building of electric generating station at Dunluce-street, Portrush, for the U.D.C. Mr. A. J. Clarke, architect, Strandmore Villa, Causeway-street, Portrush.

JANUARY 1.—**Sandhurst (Kent).**—RENOVATION.—Renovation of the Old School, Lower-green, Sandhurst. Mr. R. Piper, Conghurst, Hawkhurst.

*JANUARY 1.—**Woodford, Essex.**—HOUSE.—Erection of a house at "Harts" Sanatorium, Snake's-lane, Woodford, Essex, for the Borough Council of East Ham. Mr. J. Birch, Borough Engineer, Town Hall, East Ham. Deposit £2 2s.

JANUARY 3.—**Amesbury.**—HOUSES.—Erection of 18 houses in various parishes, for the R.D.C. Mr. A. M. Wilson, Clerk, 12, Bridge-street, Salisbury. Deposit £2 2s.

JANUARY 3.—**Deptford.**—CONVERSION.—Conversion of No. 52, Wickham-road, Brockley, into a maternity home, for the B.C. Mr. H. Morley Lawson, Borough Surveyor, Town Hall, New Cross-road, S.E.14.

JANUARY 3.—**Ebbw Vale.**—CONVERSION.—Erection and conversion of army huts into dwellings at Beaufort, for the U.D.C. Mr. P. I. Davies, Housing Architect, Council Offices, Ebbw Vale. Deposit £2.

JANUARY 3.—**Kent.**—HOUSES.—Erection of houses for the staff and teachers, for the Kent Education Committee, County of Kent. Mr. W. H. Robinson, Council's Architect, 63, Sessions House, Maidstone. Deposit £2.

JANUARY 4.—**Cowling.**—REPAIRS.—For general repairs to premises and head teacher's house at Cowling, for the West Riding E.C. West Riding Education Architect, County Hall, Wakefield.

JANUARY 4.—**Kingussie.**—HOUSES.—Erection of six four-apartment houses, for the T.C. Mr. Alexander Cattanach, Burgh Surveyor, Kingussie.

JANUARY 4.—**West Riding.**—HOUSES.—Erection of 11 houses, 10 homesteads, and 8 pairs of cottages on the Eastley and Leathley Estate, for the West Riding Small Holdings Committee. County Land Agent, County Hall, Wakefield. Deposit, £1.

JANUARY 5.—**Bury.**—ROOF.—Construction of a new roof over the Cold Stores and new gates at the Public Abattoirs, for the T.C. Mr. J. Ainsworth Settle, Borough Engineer, Bank-street, Bury. Deposit 10s. 6d

JANUARY 5.—**Clacton.**—HOUSES.—Erection of six houses, for the U.D.C. Mr. D. J. Bowe, Surveyor, Town Hall, Clacton-on-Sea.

JANUARY 5.—**Glossop.**—ADDITIONS.—Taking down the present cookhouse, &c., at the Poor Law Institution, and rebuilding same, for the Board of Guardians. Mr. Chas. F. V. Fenton, clerk, Glossop. Deposit £2 2s.

*JANUARY 5.—**London, S.W.**—CHIMNEYS.—Repairs to chimney stacks at their Infirmary in the Fulham-road for the Guardians of the City of Westminster. Mr. W. J. Lickley, Clerk to the Guardians, Guardians, Office, Prince's-row, Buckingham Palace-road, S.W.1.

JANUARY 5.—**Spennymoor.**—HOUSE.—Erection in brick of 14 pairs of semi-detached B3 type houses, for the U.D.C. Surveyor, Town Hall, Spennymoor. Deposit £3 3s.

JANUARY 6.—**Bexley Welling, Kent.**—SCHOOL BUILDING.—Enlargement of the Bexley Welling Infants' Council School by the addition of 80 places, for the Kent Education Committee. Mr. W. H. Robinson, Architect, 63, Sessions House, Maidstone, Deposit, £2.

*JANUARY 6.—**Birmingham.**—SANATORIUM.—Erection of West Heath Sanatorium. The Secretary, H.M. Office of Works, Storey's Gate, Westminster, London, S.W. 1. Deposit £1 1s.

JANUARY 6.—**Sandbach.**—COTTAGES.—Erection of 30 cottages and for other work on the Council's Housing site. Mr. John R. Price, architect, Sandbach. Deposit £2 2s.

JANUARY 7.—**Kirbymoorside.**—HOUSES.—Erection of cottages at Kirbymoorside, for the R.D.C. Mr. Richard Jennings, Clerk, Kirbymoorside.

JANUARY 7.—**Stanley.**—HOUSES.—Erection of 48 houses for the U.D.C., and the construction of the necessary streets and sewers. Messrs. Massie & Holdsworth, architects, Yorkshire Buildings, Wood-street, Wakefield.

*JANUARY 7.—**Yiewsley.**—Supply and laying or (alternatively) laying on of slates in connection with Yiewsley Housing Scheme. Secretary, H.M. Office of Works, Storey's-gate, Westminster, S.W.1.

JANUARY 8.—**Annfield Plain.**—FITTINGS.—Fitting up with shop fittings of chemist's shop at Annfield Plain, for the Industrial Co-operative Society. Architect's Office, 21, Durham-road, Blackhill, Co. Durham.

*JANUARY 10.—**Coalville.**—HOUSES.—Erection and completion of 232 houses for the U.D.C. Messrs. McCarthy, Collings & Co., architects, Central Chambers, Coalville, or Messrs. Goddard & Wain, Station Chambers, Coalville. Deposit £2 2s.

JANUARY 10.—**Hessle.**—HOUSES.—Erection of 80 houses and street and sewerage works, for the U.D.C. Mr. J. M. Dossor, architect, Waterloo Chambers, Hull.

JANUARY 10.—**Leeds.**—SUB-STATION.—Construction of a sub-station to be erected in Gledhow Wood-road, for the T.C. Messrs. Carby Hall & Dawson, architects, Prudential Buildings, Park-row, Leeds.

JANUARY 10.—**Northampton.**—HOUSES.—Alternative tenders for the erection of (1) 118 houses of concrete block construction, and (2) 118 houses of brick construction on the Harlestone-road site, for the T.C. Mr. Alfred Fidler, Borough Engineer, Guildhall, Northampton. Deposit £5

JANUARY 10.—**Truro.**—HOUSES.—Erection of houses on the following sites: Tresillian (4), Gerrans (8), Grampound-road (4), Trispen (6), Kea (2), for the R.D.C. Mr. Alfred J. Cornelius, architect, 81, Lemon-street, Truro.

*JANUARY 11.—**Hull.**—SANATORIUM BUILDINGS.—Erection of additional buildings at Cottingham Sanatorium. Director of Contracts, H.M. Office of Works, Storey's-gate, Westminster, S.W.1. Deposit £1 1s.

JANUARY 11.—**Gosforth.**—BUILDING.—Erecting a building to contain a steam disinfector in the Council's Smallpox Hospital grounds, South Gosforth. Mr. Geo. Nelson, Surveyor, Council Chambers, Gosforth.

JANUARY 11.—**Nottingham.**—CONVERSION.—For converting No. 28, Chaucer-street, into Medical Inspection Centre, for the T.C. Mr. A. Dale, City Architect, Guildhall, Nottingham. Deposit £1.

*JANUARY 13.—**Kensington.**—REPAIRS.—Repairs to the exterior of the Relief Offices, at 38, St. Luke's-road, Westbourne Park, W., for the Board of Guardians. Clerk to the Board, Guardians' Office, Marloes-road, Kensington.

JANUARY 14.—**Skipton.**—HOUSES, ROADS, AND SEWERS.—(1) Erection of 8 parlour houses and 10 scullery houses, (2) road-making and sewering. Tenders endorsed; (1) tender for Housing; (2) tender for street-making and sewering. Mr. Aldridge, Council Offices, Skipton. Deposit £1 1s.

JANUARY 14.—**Torquay.**—HOUSES.—Erection of 75 houses on the Westhill Estate, for the T.C. Mr. J. E. Knapman, Housing Clerk, Town Hall, Torquay.

JANUARY 16.—**Middleton-in-Wharfedale.**—VARIOUS WORKS.—(1) Laying out of grounds (landscape gardener's work); (2) conversion of Army huts into workshop, stores, and nurse' quarters. Trades—Bricklayer, carpenter, plumber and painter. (3) Construction of macadamised roads and asphalted paths; (4) composite flooring, at Middleton-in-Wharfedale Sanatorium, for the West Riding C.C. West Riding Architect, County Hall, Wakefield.

JANUARY 17.—**Northfleet.**—HOUSES.—Erection of 124 houses (or any lesser number) on the Northfleet House Estate, for the U.D.C. Mr. George E. Clay, architect, Crescent House, Gravesend. Deposit £2 2s.

JANUARY 17.—**West Ham.**—ALTERATIONS AND ADDITIONS.—Alterations and additions to the Fyfield Industrial School, near Ongar, Essex, for the County Borough of West Ham. Mr. John H. Jacques, Architect to the Education Committee, 2, Fen Court, Penchurch-street, E.C.3. Deposit, £5.

JANUARY 18.—**London.**—JOINERY.—Supply of joinery in connection with various housing schemes. Director of Contracts, H.M. Office of Works, Storey's Gate, S.W.1.

NO DATE.—**Clown.**—HOUSES.—Erection of houses, construction of roads and sewers, at Whitwell, Clown, and Barlborough, for the R.D.C. Mr. J. Haslam, architect, Newcastle-avenue, Worksop. Deposit £1 1s.

NO DATE.—**Launceston.**—MEMORIAL.—For granite war memorial in the Square, Launceston. Messrs. Sedding & Stallybrass, architects, 12, Queen Anne-terrace, Plymouth.

NO DATE.—**Wilton.**—HUTS.—Reconstruction of hutted camp at Wilton to provide 14 cottages, for the U.D.C. Messrs. Blount & Williamson, architects, Mitre Chambers, New-street, Salisbury.

NO DATE.—**Bristol.**—SCHOOL.—Erection of a new secondary junior school at Northcote, Westbury-on-Trym, Bristol, for Miss B. M. Baker. Mr. Henry Williams, architect, 44, Corn-street, Bristol.

NO DATE.—**London.**—COTTAGES.—Erection of cottages, in lots of 25–50 and 100 in London and provinces. Messrs. Herbert E. Dakin, Ltd., 31–33, High Holborn, W.C.1.

NO DATE.—**Middlesbrough.**—HOME.—Erection of nurses' home and operating theatre, at Eston Hospital. Mr. R. Lofthouse & Sons, architects, 129, Albert-road, Middlesbrough.

*NO DATE.—**Uxbridge.**—HOUSES, ROADS AND SEWERS.—Construction of a road and sewer, and the erection of 42 houses at West Drayton, for the R.D.C. Mr. Frederick Hall-Jones, architect, Parliament Mansions, Victoria-street, Westminster, S.W.1. Deposit £2 2s.

FURNITURE, MATERIALS, etc.

DECEMBER 25.—**Edinburgh.**—STORES.—The Commissioners of Northern Lighthouses invite tenders for the supply of stores. Supt., 84, George-street, Edinburgh.

DECEMBER 29.—**Egypt.**—PIPES.—Supply of vertical cast-iron socket pipes and specials for Suez main drainage, for the Ministry of Public Works, Cairo. Enquiry Office, Dept. of Overseas Trade, 35, Old Queen-street, S.W.

DECEMBER 29.—**Lambeth.**—PAVING FLAGS.—Supply of 5,000 superficial feet of 2½in. sawn stone paving flags from Yorkshire or Lancashire quarries, for the B.C. Mr. H. E. Anderson, Borough Engineer, Town Hall, Brixton-hill, S.W.2.

DECEMBER 30.—**London.**—JOINERY SCREENS.—Supply of joinery screens to H.M. Commissioners of Works. Controller of Supplies, H.M. Office of Works, King Charles-street, Westminster, S.W.

JANUARY 1, 1921.—**Wakefield.**—KERBS.—Supply of York stone kerbs for housing scheme of the T.C. Housing Architect, Town Hall, Chambers, Wakefield.

JANUARY 1.—**Bexley.**—MATERIALS.—Supply of tar, highway materials, pipes and stores, to the U.D.C. Mr. W. T. Howse, Surveyor, Council Offices, Bexley-heath, Kent.

JANUARY 3.—**Brentford.**—ROAD MATERIALS.—Supply of road materials to the U.D.C. Mr. W. J. Westlake, Surveyor, Council Offices, Brentford.

JANUARY 3.—**Tornsey.**—MATERIALS, &c.—Supply of road materials, and for sewer and drainage work, for the B.C. Mr. E. J. Lovegrove, Borough Engineer, Town Hall, Southwood-lane, Highgate, N.6.

JANUARY 3.—**London.**—HOSE.—Supply to the Commissioners of H.M. Works of canvas hose. Controller of Supplies, H.M. Office of Works, &c., King Charles-street, Westminster, S.W.1.

JANUARY 3.—**Wakefield.**—ROAD MATERIAL.—Supply of road material to the West Riding of Yorkshire (Highways Committee). Mr. F. G. Carpenter, County Surveyor, County Hall, Wakefield.

*JANUARY 5.—**Glamorganshire.**—ROAD MATERIALS.—Supply of road materials and haulage for main roads, for the C.C. Mr. G. A. Phillips, County Surveyor, County Hall, Cardiff.

*JANUARY 5.—**Glamorganshire.**—TOOLS, &c.—Supply of tools and ironmonger's goods for one year, for the Glamorganshire C.C. Mr. Geo. A. Phillips, County Surveyor, Glamorgan County Hall, Cardiff.

JANUARY 6.—**Westminster, S.W. 1.**—LATHS.—Supply of plasterers' laths, first quality. Secretary, H.M. Office of Works, Storey's-gate, Westminster, S.W.1.

JANUARY 7.—**Beverley.**—MATERIALS.—Supply of broken whinstone, granite, tarred and untarred slag, &c.; also for the supply of tar for spraying and tar for grouting, for the East Riding C.C. County Surveyor, County Hall, Beverley.

JANUARY 7.—**Harwich.**—MATERIALS.—Supply of road materials, hire of steam roller and tar-spraying, for the T.C. Mr. F. H. French, Borough Surveyor, Harwich.

JANUARY 10.—**Dorchester.**—MATERIALS.—For supply of road materials to the Dorset C.C. Mr. W. T. Fletcher, County Surveyor, Dorchester.

JANUARY 10.—**Salford.**—LUBRICATING OILS.—Supply of lubricating oils to the Electricity Department. Borough Electrical Engineer, Electricity Works, Frederick-road, Salford.

JANUARY 10.—**South Stoneham.**—GRANITE.—Supply of British macadam, to the R.D.C. Mr. W. R. Cowell, The Workhouse, West End, Hants.

JANUARY 11.—**Wandsworth.**—MATERIALS.—Supply of materials and the execution of works, for the B.C: Mr. D. A. Nicholl, Town Clerk, Council House, Wandsworth, S.W.18.

JANUARY 12.—**Ipswich.**—ROAD MATERIALS.—Supply of road materials to the East Suffolk C.C. Mr. W. Jervis, County Road Surveyor, Ipswich.

JANUARY 15.—**Hatfield.**—MATERIALS.—Supply of broken granite, slag, and tar-macadam, to the Herts C.C. Mr. A. Ernest Prescott, County Surveyor, County Surveyor's Office, Hatfield.

JANUARY 20.—**Lincoln.**—MATERIALS.—Supply of road stone and materials to the Lindsey C.C. Mr. A. G. Bradshaw, County Surveyor, Newland House, Lincoln.

ENGINEERING, IRON AND STEEL.

DECEMBER 26.—**Norwich.**—HEATING INSTALLATION.—Supply and fixing of heating installation at Churchmen House, St. Giles-street, for the Health Committee. Mr. A. E. Collins, City Engineer, Guildhall, Norwich.

DECEMBER 27.—**Llanfyrnach.**—BRIDGE.—Erection of bridge at Clydey, for the R.D.C. Mr. Griffiths, Star Factory, Llanfyrnach.

DECEMBER 28.—**Newport, I.W.**—PUMP.—Supply of sludge pump and casing, to the T.C. Borough Surveyor, Newport, I.W.

DECEMBER 31.—**Birmingham.**—HEATING INSTALLATION.—For low-pressure heating and hot water, services for a portion of the Dudley-road Hospital, for the Board of Guardians. Messrs. Edwards & Shaw, consulting engineers, 105, Colmore-row, Birmingham. Deposit, £5 5s.

JANUARY 3, 1921.—**Southwark, S.E.1.**—BOILERS.—Taking down of boilers, fittings, blow-down tank, &c., and transferring same and rebuilding foundation for the Guardians. Clerk to the Guardians, Southwark Union Offices, 51, Ufford-street, Blackfriars-road, S.E.1.

JANUARY 4.—**Bridgend.**—RAILWAY WIDENING.—For widening the railway for additional loop lines between Bridgend and Margam, for the G.W.R. Co. Engineer, Paddington Station, London.

JANUARY 4. — **Dublin.** — PAVING MATERIAL PLANT.—**Supply and erection of plant for the manufacture of tar macadam, asphalte concrete and asphalte surface coat, for the T.C.** Mr. Patrick Tobin, Secretary, Paving Committee, City Hall, Dublin.

JANUARY 6.—**London.**—ELECTRIC WIRE.—Supply to H.M. Commissioners of Works of electric wire and cable during a period of six months. Controller of Supplies, H.M. Office of Works, &c., King Charles-street, Westminster, London, S.W.1.

JANUARY 10, 1921.—**Belgium.**—REINFORCED CONCRETE BRIDGE.—Tenders have been called for the construction of a reinforced concrete bridge at Tournai. A copy of the specification and blue print has been received in the Department and can be consulted by United Kingdom firms on application to the Enquiry Room, Department of Overseas Trade, 35, Old Queen-street, S.W.1.

JANUARY 10.—**Grays.**—PUMPING PLANT.—Supply of four crude oil engines, C.C. dynamos, centrifugal pumps, screens, travelling overhead cranes, and other machinery, for the Thurrock, Grays and Tilbury Joint Sewerage Board. Messrs. John Taylor & Sons, engineers, 36, Victoria-street, Westminster, S.W.1. Deposit, £5.

JANUARY 11.—**Warrington.**—RAILS, &C.—Supply of 200 tons of steel tram rails, 17 pairs of points, 9 crossings, 1 special junction, 1 manganese curve for double track. Tramways Manager, Car Sheds, Mersey-street, Warrington.

JANUARY 17.—**Poole.**—BOREHOLES.—Sinking of two 21 in. diameter boreholes at the Poole Waterworks Pumping Station, Corfe Mullen. Mr. A. P. I. Cotterell, engineer, 17, Old Queen-street, Westminster, S.W.1. Deposit £5 5s.

ROAD, SANITARY, AND WATER WORKS.

DECEMBER 25.—**Edinburgh.**—ROADS, &C.—Construction of sewers and roads, Wardie Housing Area (Granton-road), for the T.C. Mr. A. Horsburgh Campbell engineer, 1, Parliament-square, Edinburgh.

DECEMBER 27.—**Tain.**—ROADS.—Construction of new street, fences, sewer, water and gas mains, in connection with housing scheme of T.C. Mr. A. Gordon Maitland, architect, Tain.

DECEMBER 27.—**Whitefield.**—ROADS.—Reconstruction of Moss-lane, about 9,000 sq. yards, for the U.D.C. Mr. George M. Denton, Surveyor, Council Offices, Whitefield, Lancs. Deposit, £2 2s.

DECEMBER 29.—**Birmingham.**—CULVERT, &C.—Deepening of the Hockley Brook under Thimble Mill-lane, Aston, for about 300 yards, in which is included the reconstruction of a culvert 14 ft. 4 in. wide and about 50 yards long under the London & North-Western Railway, for the T.C. Mr. Herbert H. Humphries, City Engineer, The Council House, Birmingham. Deposit, £2.

DECEMBER 29. — **Newport, Mon.** — ROADS AND SEWERS.—Construction of roads and sewers on St. Julian's Estate. Mr. C. F. Ward, Architect, Town Hall, Newport, Mon.

DECEMBER 29.—**New Quay.**—SANITARY.—Installing dry earth system at Council School and erection of shed for storing earth, for the Cardiganshire E.C. Mr. Rhys Jones, County Architect, Llandyssul.

DECEMBER 29.—**Twickenham.**—STREET WORKS.—For making up Campbell-road, for the U.D.C. Mr. F. W. Pearce, Surveyor, Town Hall, Twickenham. Deposit £1 1s.

DECEMBER 29. — **Whiston.** — SEWAGE DISPOSAL WORKS.—Construction of sewage tanks, &c., for the R.D.C. Mr. H. B. Ward, 15, Lord-street, Liverpool. Deposit £5.

DECEMBER 30.—**Draycott.**—ROADS.—For the making up of Cleveland-avenue, Draycott, for the R.D.C. Mr. J. S. Wooddisse, surveyor, Aston-on-Trent, near Derby.

DECEMBER 31.—**Barnet.**—ROADS.—Making up of Hampden road, for the U.D.C. Mr. F. P. Kindell, Surveyor, Council Chambers, Friern Barnet, N.11. Deposit £2 2s.

DECEMBER 31.—**Devizes.**—CEMETERY EXTENSION.—Extension to Cemetery, for the Devizes and Roundway Joint Burial Committee. Mr. A. J. Randell, architect, 16, Market-place, Devizes.

DECEMBER 31.—**Kirkcaldy.**—ROADS, &C.—For road-making and sewerage works of housing site, for the T.C. Mr. James Gentles, surveyor, 184, High-street, Kirkcaldy. Deposit £1 1s.

DECEMBER 31.—**Kirkcaldy.**—SEWERS.—For construction of outfall sewer, &c., at Hendry-road housing site, for the T.C. Mr. J. Gentles, 184, High-street, Kirkcaldy. Deposit £1 1s.

DECEMBER 31.—**Mytholmroyd.**—ROADS, &C.—Construction of roads in connection with housing site, for the U.D.C. Messrs. Sutcliffe & Sutcliffe, architects, New-road, Hebden Bridge.

JANUARY 1, 1921.—**France.**—CEMETERIES.—For the third programme of construction consisting of, approximately, 45 cemeteries in France and Belgium. Contract 1920 C., Secretary (Works Branch), Imperial War Graves Commission, 33-38, Baker-street, London, W.

JANUARY 4.—**Beddington.**—ROADS. — Tarspraying 300,000 square yards (more or less) of roads within the district of the U.D.C. Mr. S. F. R. Carter, Surveyor, Council Offices, Wallington, Surrey.

JANUARY 4.—**Elham.**—SANITARY.—For the emptying of cesspools and pail closets in the parish of Lyminge, for the R.D.C. Mr. W. E. Mancock, Inspector of Nuisances, Lyminge.

JANUARY 4.—**London.**—REMOVAL OF REFUSE.—Collection, removal and disposal of refuse, whether (1) sewage and other refuse from conduits; (2) dust, rubbish, and other refuse from car sheds and other depots (except permanent-way depots), and (3) excavation rubbish and other refuse from permanent-way routes and depots, as may be required in connection with the Council's tramways. General Manager, London County Council Tramways, 23, Belvedere-road, S.E.1.

JANUARY 4.—**Wandsworth.**—ROADS.—Making-up and paving of Brudenell-road, Upper Tooting, for the B.C. Borough Engineer and Surveyor, 215, Balham High-road, S.W.17. Deposit, £5 5s.

JANUARY 6.—**Llantrisant.**—ROAD.—Construction of a new road, about half-a-mile in length, between Ystradbarwig and Ty'n-y-nant, in the parish of Llantwit Fardre, for the R.D.C. Mr. T. Saunders, Surveyor, Council Offices, Pontyclun. Deposit £2.

JANUARY 7.—**Ripley.**—WATER MAIN.—Laying a new 6 in. water main from Church-street to Argyll-road, for the U.D.C. Mr. G. W. Bird, Town Hall, Ripley.

Auction Sales, Tenders, etc.

JANUARY 4.—**Sussex.**—Messrs. Samuel Ridley & Hollis will sell, by direction of the Disposal Board, at Portslade Camp, Sussex, and at Southwick Admiralty Works, Sussex, camp and works buildings in corrugated iron and wood. Auctioneers, 156, North-street, Brighton.

JANUARY 11, 1921.—**London, E.C.**—Messrs. Fuller Horsley Sons & Cassell will sell by auction in lots at the Commercial Sale Rooms, Mincing-lane, E.C.3., new building materials, plant and machinery, chemical plant. Auctioneers, 11, Billiter-square, E.C.3.

✱JANUARY 12, 13 and 14.—**Redcombe.**—Messrs. Bruton, Knowles & Co. will sell, at Redcombe Aerodrome (12 miles from Cheltenham), 110 buildings, corrugated iron and wood section buildings, and other miscellaneous effects. Auctioneers, Albion Chambers, Gloucester.

Competitions.

(*See Competition News, page* 714.)

Public Appointments.

DECEMBER 28.—**Hampton.**—Clerk of Works required by the U.D.C. for their housing scheme. Mr. Sidney H. Chambers, Surveyor to the Council, Public Offices, Hampton, Middlesex.

DECEMBER 30.—**Ampthill.**—Clerk of Works required by the R.D.C. Mr. H. J. Webber, Clerk to the Council, County Court Hall, Ampthill.

JANUARY 3.—**Aylsham, Norfolk.**—Clerk of Works required by the R.D.C. for houses being built under the Housing Acts. Mr. Henry J. Gidney, Clerk to the Council, Aylsham, Norfolk.

✱JANUARY 6.—**Johannesburg.**—Professor of architecture required for the University College of Architecture. Messrs. Chalmers, Guthrie & Co., Ltd., 9, Idol-lane, E.C.3.

✱NO DATE.—**Straits Settlements.**—Quantity Surveyor required by the Government of the Straits Settlements for service in the Public Works Department for three years, with possible extension. Crown Agents for the Colonies, 4, Millbank, London, S.W.1.

MISCELLANEOUS.

FOR SALE—*continued.*

(*Continued from page* xiv.)

CORRUGATED ROOFING SHEETS, Government Surplus Stock, never been used, 6ft. 7in. long, 2 ft. 2 in. wide, 4s. 6d. per sheet.—CHARLES HOWARD, 3a, Church-street, South Lambeth, London.

CONCRETE BUILDING BLOCKS, BALLAST AND BREEZE. Immediate delivery. Large stock; well matured. Also Sharp Sand and Gravel.—STANDARD BUILDING CONSTRUCTION CO., Ltd., Slough.

STOCK BRICKS. Large Quantity. Immediate delivery.—Box 294, Office of "The Builder."

FOR IMMEDIATE SALE (delivery from stock), heavy and light Trestles, sizes from 24 in. to 36 in. high and 36 in. long. Well made for Aircraft production purposes. Also quantity of three-ply Timber, in all sizes and thicknesses. Details will be sent on application and no reasonable offer refused.—Surplus Dept., MANN, EGERTON, Norwich.

SCAFFOLD POLES (5 000), Boards (8,000), Putlogs (8,000), Poling Boards, Ladders. Prompt delivery from stock; 4 × 2 from £30 standard.—LEWISHAM TIMBER CO., Ltd., S.E. 13. (1049 Lee Green.)

FOR SALE.

JOINERY BOARDS.—Fine Parcel in 1 × 8 and 9 in., White, both planed and unplaned.—Box 310, Office of "The Builder."

FOR SALE.

WHITEWOOD.—Quantity of 1 × 18 and wider "Selects." Also a parcel of 6 in. and wider Prime.—Box 311, Office of "The Builder."

FOR SALE.

OAK.—Seasoned Timber cut to Buyers' sizes for Oil and other work.—Box 312, Office of "The Builder."

40,000 OLD ROOFING TILES. Fine colour; from old Tudor Mansion.—Box 309, Office of "The Builder."

WANTED.

200 RAILWAY SLEEPERS WANTED, Second-hand for temporary road. State condition and price.—GODLEY, Jarvis Brook, Sussex.

WANTED.—18 in. PORTABLE RAILWAY.—Full particulars to J. W. WOOLNOUGH, 50, Southside-road, Eastbourne.

REQUIRED. — 150 LAVATORY BASINS, suitable for Hotel Bedrooms. Delivery must be guaranteed in February.—Send price and particulars to Box 19,201, c/o. WILLINGS, 33, Knightsbridge, S.W. 1.

WANTED.—Second-hand INVALID LIFT with a floor area of about 3 ft. × 5 ft. 6 in., to accommodate Invalid in Chair, and Assistant. Must be in good working order.—SMYTH-RICHARDS, STAPLEDON & FOX, Land Agents and Surveyors, Bideford, N. Devon.

WANTED.—Second-hand Galvanised or Cast-iron TANK or CISTERN, in good condition, to hold about 1,000 gallons.—Apply, A. POOLE & CO., Chard.

WANTED. — Eight STEEL ROOF TRUSSES, 30 to 40 ft. span. Also 3 REVOLVING SHUTTERS, 8 to 10 ft. wide and 11 to 12 ft. high. GODLEY, Jarvis Brook, Sussex.

WASHED RIVER BALLAST, SHINGLE, SAND, ETC.

Specially Suitable for Concrete.
QUICK DELIVERY TO JOB.

For prices and samples write—

THE STANWELL SILICA Co., Ltd.,
404, Bank Chambers, 329, High Holborn, W.C.

SCAFFOLD POLES

15/17, 18/21 22 & 23/40 fts., 2/2½ in. tops
LADDERS, PUTLOGS, QUEBEC SPRUCE BOARDS, CORDS, and WIRE LASHES
Stocks, London, Thornton Heath, and Hull.
Prices on application.
W. J. HOBBS,
'Phone: Victoria 1842 92 Victoria Street, S.W.1

BUILDINGS STEAM CLEANED.

Improved Process. No Injury to the Fabric.

THE STEAM CLEANING CORPORATION,
9a, LITTLE JAMES ST., GRAY'S INN RD., LONDON, W.C.

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. Since our last issue, various prices have been revised.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge. £ s. d.

Best Stocks 5 1 6

Per 1000, Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons	3 17 0	Best Blue Pressed Staffordshire ...	12 4 0
Best Stourbridge Fire bricks	12 14 0	Do. Bullnose ..	12 14 0
GLAZED BRICKS—		Blue Wire Cuts	10 6 6
Best White, Ivory, and Salt Glazed Stretchers ..	29 10 0	D'ble Str'tch'rs	38 0 0
		D'ble Headers	35 0 0
		One Side and two Ends ..	39 0 0
Headers.....	29 0 0	Two Sides and one End	40 0 0
Quoins, Bullnose and 4½in. Flats	36 0 0	Splays and Squints.....	37 10 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

	s.	d.		
Thames Ballast	19	6	per yard,	delivered
Pit Sand	25	0		
Thames Sand	25	6	" "	2 miles
Best Washed Sand	25	6	" "	radius
½ in. Shingle for Ferro-Concrete	24	6	" "	Paddington.
¼ in. " "	25	6	" "	

Per ton, delivered in London area.

	£ s. d.		£ s. d.
Best Portland Cement	4 7 6	..	4 13 0

80/6 alongside at Vauxhall in 80-ton lots.

Ferrocrete per ton extra on above	10	0
Best Ground Blue Lias Lime	3 12	6 at rly. depot.

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 2s. 6d. each and credited at 2s. each if returned in good condition within three months.

Grey Stone Lime ..... 75s. 0d. per ton delivered.
Stourbridge Fireclay in s'cks 44s. 8d. per ton at rly. dpt.

STONE.

	s.	d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube.....	3	2½
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	3	5½
Do. do. delivered on road wagons at Nine Elms Depot	3	6½
PORTLAND STONE— Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L.&S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4	11½
Do. do. delivered on road waggons at above stations, per ft. cube..	5	0½

White basebed, 3d. per ft. cube extra.

NOTE.—½d. ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.

YORK STONE, BLUE—*Robin Hood Quality.* Delivered at any Goods Station London.		s.	d.
Scappled random blocks	Per Ft. Cube	17	4
6 in. sawn two sides landings to sizes (under 30 ft. super.)	Per Ft. Super	11	10½
6 in. rubbed two sides, ditto	"	13	3½
3 in. sawn two sides slabs (random sizes)	"	5	3
2 in. to 2½ in. sawn one side slabs (random sizes)	"	3	2
1½ in. to 2 in. ditto, ditto	"	2	9
HARD YORK— Delivered at any Goods Station London.			
Scappled random blocks	Per Ft. Cube	13	3
6 in. sawn two sides landing to sizes (under 40ft. super.)	Per Ft. Super	10	3
6 in. rubbed two sides ditto	"	12	1
4 in. sawn two sides slabs (random sizes)	"	6	2
3 in. ditto, ditto	"	4	11
2 in. self-faced random flags ..	Per Yard Super	16	2

WOOD.

GOOD BUILDING DEAL.

Inches	£ s.	
4 × 11	67 10	per standard
4 × 9	67 10	"
4 × 8	60 0	"
4 × 7	50 0	"
3 × 8	48 10	"
3 × 7	47 10	"
2½ × 7	47 10	"
3 × 6	45 0	"
3 × 11	65 0	"
2 × 11	65 0	"
3 × 9	57 10	"
2½ × 9	57 10	"
3 × 4½	47 10	"
3 × 4	47 10	"

PLANED BOARDS.

1 × 11	67 10	"
1 × 9	65 0	"

PLAIN EDGE FLOORING.

Inches		
⅝	40/-	square
¾	45/-	"
1	52/6	"
1¼	66/-	"
1½	75/6	"

TONGUED AND GROOVED FLOORING.

Inches		
1	52/-	square
1¼	65/-	"
1½	75/-	"

WOOD (*Continued*).

MATCHINGS (BEST).

Inches		
.....	36/-	square
¾	42/6	"
1	54/-	"

BATTENS.

Inches	£ s.	
¾ × 2	45 0	per standard

SAWN LATHS.

Per bundle				0	6	6
Dry Wainscot Oak, per ft. super, as inch	0	3	6 to	0	4	0
¾ in. do. do.	0	3	0 ..		—	
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0	2	6 to	0	3	0
Cuba. Mahogany	0	4	0 to	0	4	6
Teak (Rangoon, Moulmein or Java), per load.. ..	75	0	0 to	85	0	0
American Whitewood planks, per ft. cube ..	0	18	0 to	1	4	0
Scotch Glue, per cwt.	10	0	0 ..		—	
Liquid Glue, per cwt.....	6	12	0 ..		—	

SLATES.

1st quality slates from Bangor or Portmadoc in truck load delivered London area. Per 1,000 of 1,200.

		£ s. d.
Best Blue Bangor Slates,	24 by 12	56 10 0
" " "	22 by 12	46 0 0
First quality "	22 by 11	42 10 0
" "	20 by 12	42 0 0
Best Blue Portmadoc "	20 by 10	36 10 0
" "	18 by 10	29 10 0
First quality "	18 by 9	24 5 0
" "	16 by 10	22 15 0
" "	16 by 8	18 0 0

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district.....	6 15 0
Ditto hand-made ditto.....	7 5 0
Ornamental ditto	7 2 6
Hip and valley tiles (per dozen)	0 15 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—	£ s. d.
R. S. Joists, cut and fitted	36 0 0
Plain Compound Girders	40 0 0
" Stancheons	42 0 0
In Roof Work	46 0 0

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £15 net value delivered direct from works. 5 per cent. less above gross discounts, carriage forward if sent from London stocks.)

	Sizes up to and including ⅜ in. Tubes.	Sizes up to and including 2in. Tubes.	Fittings.	Sizes 2¼ in. to 6 in. Tubes.	Fittings.
Gas	+ 7½	+ 5 —	5 —	2½ —	17½
Water	+17½	+15	Net +	6½ —	15
Steam....	+28½	+26½ +	5 +	16½ —	12½
Gal.Gas....	+32½	+30	+ 5 +	22½ —	7½
" Water	+45	+42½ +	10 +	33½ —	5
" Steam	+57½	+55 +	15 +	45 —	2½

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6 fts..	6 10 ..	4 10 ..	5 9½
2½ in. " ..	7 10½ ..	5 4 ..	7 3
3 in. " ..	9 8½ ..	5 9½ ..	8 8½
3½ in. " ..	10 9 ..	7 3 ..	10 2
4 in. " ..	11 9½ ..	8 2½ ..	11 7½

RAIN-WATER PIPES, &c.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts. plain	5 9 ..	3 0 ..	4 2
2½ in. " " ..	6 4 ..	3 7 ..	5 0
3 in. " " ..	7 0 ..	4 6 ..	6 8
3½ in. " " ..	9 1 ..	5 3 ..	7 9
4 in. " " ..	10 0 ..	6 6 ..	9 6

L.C.C. DRAIN PIPES,—9 ft. lengths. London Prices. 4 in., 14/-. .. 5 in., 17/9. .. 6 in.. 21/5.

	Per ton in London. £ s. d.		£ s. d.
IRON— Common Bars	34 10 0	to	35 10 0
Staffordshire Crown Bars - good merchant quality	35 0 0	..	37 0 0
Staffordshire "Marked Bars"	36 10 0	..	38 10 0
Mild Steel Bars	32 0 0	..	34 0 0
Steel Bars. Ferro-Concrete quality, basis price ..	32 0 0	..	34 0 0
Hoop Iron, basis price ..	40 0 0	..	42 0 0
" " Galvanised ..	60 0 0	..	64 0 0
Sheet Iron, and Soft Steel Black— Ordinary sizes to 20 g.	40 0 0	..	42 0 0
" " " 24 g.	41 0 0	..	42 0 0
" " " 26 g.	43 0 0	..	44 0 0
Sheets Flat Best Soft Steel, C.R. & C.A. quality— Ordinary sizes, 6ft by 2ft. to 3ft. to 20 g.	50 0 0	..	52 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 22 g. and 24 g.....	51 0 0	..	53 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 26 g...	53 0 0	..	55 0 0
Flat and Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 9ft. 20 g.	40 0 0	..	41 0 0

METALS (*Continued*).

	Per ton in London. £ s. d.		£ s. d.
Ordinary sizes, 6ft. to 9ft. 22 g. and 24 g.	41 0 0	..	42 0 0
Ordinary sizes, 6ft. to 9ft. 26 g.	43 0 0	..	45 0 0
Sheets Galvanised Flat, Best quality— Best Soft Steel Sheets, 6ft. by 2ft. to 3ft. to 20g. and thicker ..	48 0 0	..	49 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	49 0 0	..	50 0 0
Best Soft Steel Sheets 26 g.	50 0 0	..	52 0 0
Cut Nails, 3in. to 6in. .. (under 3in. usual trade extras.)	45 0 0	..	47 0 0

LEAD, &c.

Delivered in London.

	£ s. d.		£ s. d.
LEAD Sheet, English, 4 lb. and up	42 0 0	..	38 0 0
Pipe in coils	42 10 0	..	38 10 0
Soil Pipe	45 0 0	..	41 0 0
Compo pipe	46 0 0	..	42 0 0

NOTE—Country delivery, 30s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

		£ s. d.		£ s. d.
Old lead, ex London area, at Mills	per ton	19 0 0	..	—
Do., ex country, carriage forward.....	per ton	20 0 0	..	—
COPPER— Strong Sheet	per lb.	0 2 3	..	—
Thin "	"	0 2 4	..	—
Copper nails	"	0 2 3	..	—
Copper wire	"	0 2 4	..	—
TIN—English Ingots	"	0 2 6	..	—
SOLDER—Plumbers'	"	0 1 4	..	—
Tinmen's.....	"	0 1 9	..	—
Blowpipe	"	0 2 0	..	—

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

	Per Ft.		Per Ft.
15 oz. fourths	6d.	32 oz. fourths	11d.
" thirds	6½d.	" thirds	1/-
21 " fourths	8d.	Fluted, Obscured and	
" thirds	8½d.	Enamelled Sheet,	
26 " fourths	10d.	15 oz.	10d.
" thirds	11d.	21 "	1/-

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
⅛ Rolled plate	6½d.
⅛ Rough rolled and rough cast plate.....	7½d.
¼ Rough rolled and rough cast plate.....	8½d
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	7½d.
Ditto, tinted	9½d.
Rolled Sheet	7d.
White Rolled Cathedral.....	7d.
Tinted do.	9d.

PAINTS, &c.

			£ s. d.
Raw Linseed Oil	in pipes..... per gallon		0 5 1
" " "	in barrels .... "		0 5 2
" " "	in drums .... "		0 5 4
Boiled "	in barrels .... "		0 5 8
" "	in drums .... "		0 5 10
Turpentine	in barrels ..... "		0 9 10
"	in drums (10 gall.) .. "		0 10 4
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)			60 5 0
GENUINE WHITE LEAD PAINT— "Father Thames," "Nine Elms," "Park," "Supremus" and other best brands (in 14 lb. tins) not less than 5 cwt. lots		per ton delivered	36 0 0
Red Lead, Dry (packages extra) ..		per ton	50 0 0
Best Linseed Oil Putty		per cwt.	1 5 0
Filocol.....		per cwt.	1 0 6
Size. X D Quality.....		fkn.	0 5 9

VARNISHES, &c.

		Per gallon. £ s. d.
Oak Varnish.....	Outside	0 18 0
Fine ditto	ditto	1 0 0
Fine Copal	ditto	1 1 6
Pale Copal	ditto	1 2 6
Pale Copal Carriage	ditto	1 4 6
Best ditto	ditto	1 14 6
Floor Varnish.....	Inside	0 19 0
Fine Pale Paper	ditto	0 18 0
Fine Copal Cabinet	ditto	1 2 6
Fine Copal flatting	ditto	1 0 6
Hard drying Oak	ditto	0 18 0
Fine Hard drying Oak	ditto	0 19 0
Fine Copal Varnish	ditto	1 0 6
Pale ditto	ditto	1 2 6
Best ditto	ditto	1 14 6
Best Japan Gold Size.....		0 16 6
Best Black Japan		1 0 0
Oak and Mahogany Stain (water)		0 17 6
Brunswick Black		0 11 9
Berlin Black.....		0 19 0
Knotting (patent)		1 18 6
French and Brush Polish		1 14 0
Liquid Dryers in Terebine		0 16 0
Cuirass Black Enamel		0 7 0

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

CURRENT PRICES FOR BUILDING WORK IN LONDON.*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	25	0
Add if in clay	" "	2	0
Add for every additional depth of 6 ft.	" "	1	6
Planking and strutting to trenches	per foot super	0	7½
Do. to sides of excavation, including shoring	" "	1	6

CONCRETOR.

		s.	d.
Portland cement concrete in foundation 1 to 6	per yard cube	55	0
Add if in underpinning in short lengths	" "	10	0
Add if in floors 6 in. thick	" "	4	0
Add if in beams	" "	5	0
Add if aggregate 1 : 2: 4	" "	15	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	4	6

BRICKLAYER.

		£	s	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	50	15	0
Add if in stocks	"	12	10	0
Add if in Staffordshire blues	"	34	10	0
Add if in Portland cement and sand	"	4	15	0

FACINGS.

		s.	d.
Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0 1¼

POINTING.

		s.	d.
Neat flat strucks or weathered joint	" "	0	0 3½

ARCHES.

		s.	d.
Extra only to the price of ordinary brickwork :—			
Fair external in half brick rings	" "	0	1 0
Axed in stocks	" "	0	2 0
Rubbed and gauged jointed in putty camber or segmental	" "	0	7 0

SUNDRIES.

		s.	d.
Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	1 8
Setting ordinary register grates and stoves	each	1	5 0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	6	15 0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	9	0
Three-quarter-inch vertical damp course	" "	14	3
One inch on flats in two thicknesses	" "	12	0
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	6

MASON.

		s.	d.
York stone templates fixed	per foot cube	22	0
York stone sills fixed	" "	35	0
Bath stone and all labour fixed	" "	16	9
Portland stone fixed	" "	26	0

SLATER.

		s.	d.
Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	98	0
Do. 20 in. × 10 in. Do. Do.	"	115	0
Do. 24 in. × 12 in. Do. Do.	"	117	6

CARPENTER AND JOINER.

		s.	d.
Fir framed in plates	per foot cube	9	6
Do. joists	" "	10	6
Do. roofs, floors and partitions	" "	11	9
Do. trusses	" "	14	0

		¾"	1"	1¼"	1½"
Deal rough close boarding	per sq.	60/-	81/-	100/-	108/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	"	68	0
Do. to beams	per ft. sup.	1	10
Centres for arches	"	2	4
Gutter boards and beams	"	1	9

FLOORING.

		¾"	1"	1¼"	1½"
Deal-edges shot	per sq.		82/-	104/-	120/-
Do. tongued and grooved	"		88/-	110/-	127/-
Do. matchings	"	74/-	89/-		
Moulded skirting, including backings and grounds	per ft. sup.	2/4	2/8	3/2	3/8

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	2	0
Two Do. Do. Do.	" "	2	6
Add for fitting and fixing	" "	0	6
Deal-cased frames with 1 in. inner and outer linings, 1¼ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares double hung, double hung with pulleys, lines and weights; average size	" "	5	6

DOORS.

		1½"	1¾"	2"
Two-panel square framed	per ft. sup	2/8	2/11	3/1
Four-panel Do.	"	3/-	3/4	3/7
Two-panel moulded both sides	"	3/4	3/7	3/10
Four-panel Do. Do.	"	3/8	3/11	4/2

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	22	0

		1"	1¼"	1½"
Plain deal jamb linings framed	per ft. sup.	2/3	2/5	2/9
Deal shelves and bearers	"	2/-	2/2	2/3
Add if cross tongued	"	2/-	2/-	2/-

STAIRCASES.

	1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough brackets	3/4	4/-	4/8	—	—
Deal strings wrot in both sides and framed	4/6	4/9	—	—	—

		s.	d.
Housings for steps and risers	each	1	0
Deal balusters, 1 in. × 1¼ in.	per ft. run.	0	9
Mahogany handrail; average 3 in. × 3 in.	" "	6	3
Add if ramped	" "	12	6
Add if wreathed	" "	25	0

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	9d.	Rim locks	2/6
Sash fasteners	1/-	Mortice locks	5/6
Casement fasteners	1/6	Patent spring hinges and letting in to floor and making good	20/-
Casement stays	1/3		
Cupboard locks	1/6		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	42	9
Plain compound girders	"	46	9
Do. stanchions	"	48	9
In roof work	"	52	9

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints	ft. run	2/-	2/6	3/9	4/3
Ogee Do. Do.	"	2/6	3/3	4/-	5/-
Rain-water pipes with ears	"	2/11	3/9		
Extra for shoes and bends	each	4/7	6/3		
Do. stopped ends	"	2/-	2/6	3/9	4/3
Do. nozzles for inlets	"	2/3	2/9	4/-	4/6

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	61	6
Do. Do. in flats	"	56	6
Extra labour and solder in coated cesspools	each	7	9
Welt joint	per ft. run.	0	6
Soldered seam	" "	2	1
Copper nailing	" "	0	8

		½"	¾"	1"	1½"	2"	4"
Drawn lead waste	per ft. run	1/1	1/9	2/-	3/7	4/6	
Do. service	"	1/8	2/2	2/8	4/3		
Do. soil	"						7/2
Bends in lead pipe	each					3/7	9/-
Soldered stop ends	"	1/4	1/10	2/3	3/2	3/10	
Red lead joints	"	1/-	1/2	1/5	2/1	2/8	5/5
Wiped soldered joints	"	3/2	3/10	4/6	5/5	7/2	10/10
Lead traps and cleaning screws	"				16/2	21/7	
Bib cocks and joints	"	7/6	11/3	18/-	48/-		
Stop cocks and joints	"	18/-	20/-	30/-	75/-		

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	3	4
Do. Do. Sirapite	" "	3	9
Do. Do. Keen's	" "	5	0
Add sawn lathing	" "	2	0
Add metal lathing	" "	3	6
Portland cement screed	" "	2	11
Do. plain face	" "	4	9
Mouldings in plaster	per 1 girth	0	3
One-and-a-half granolithic pavings	per yard sup.	6	11

GLAZIER.

		s.	d.
21 oz. sheet plain	per foot sup.	1	9½
26 oz. Do.	" "	2	0
Obscured sheet	" "	2	3
⅛ in. rolled plate	" "	1	3½
¼ in. rough rolled or cast plate	" "	1	4½
¼ in. wired cast plate	" "	1	9½

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	1	6
Knotting and priming	" "	1	0
Plain painting 1 coat	" "	1	6
Do. 2 coats	" "	2	4
Do. 3 coats	" "	3	2
Do. 4 coats	" "	4	0
Graining	" "	3	0
Varnishing twice	" "	2	6
Sizing	" "	0	4
Flatting	" "	0	9
Enamel	" "	2	0
Wax polishing	per foot sup.	0	11
French polishing	" "	1	9
Preparing for and hanging paper	per piece	2/- to 5/-	

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

ALFRETON.—The U.D.C. is asking the Blackswell R.D.C. if it is willing to join in a scheme to provide a supply of water to the parishes of Blackswell and South Normanton.

ARDWICK.—The U.D.C. has accepted tenders for the erection of 50 more houses at Woodlands and 70 at Skellow. This will make 230 in hand at Woodlands and 130 at Skellow.

AYLESBURY.—Plans passed by T.C.: Alterations and additions, Nestlés Milk Co., Ltd., 23, Walton-road; electric lift, Hazell, Watson & Viney, Ltd., Tring-road; garage, Hazell, Watson & Viney, Ltd., Turnfurlong-lane.

BAGSHOT.—In a letter to Lady Elphinstone, of Bagshot, Sir Malcolm Murray, private secretary to the Duke of Connaught, states that his Royal Highness has for some time past desired to present to Bagshot a building suitable for a nursing home, to perpetuate the memory of the late Duchess, who spent a great part of her life in the neighbourhood. With this object in view he has purchased Humnaby House, and will make the necessary alterations and additions to render it suitable as a nursing home to accommodate five in-patients and the nursing staff.

BANBURY.—Plans passed: Bungalow, Oxford-road, for Miss Gillett; garage, Albert-street, for Messrs. Ewins & Son.

BOSTON.—The R.D.C. is applying for a loan of £3,750 for new bridges.

BOURNE.—The U.D.C. has decided to postpone for six months the erection of a tuberculosis pavilion to their Isolation Hospital, as the estimates received for the building exceed the amount which would be allowed by the Government, viz., £180 per bed.

BRIERFIELD.—The Electricity Commissioners have sanctioned a loan of £4,200 to the U.D.C. for electricity mains.

BRIXHAM.—The U.D.C. has given instructions for the preparation of plans for the erection of a further 10 parlour-type houses on the Garlic Rea site.

CALLINGTON.—The M.H. has sanctioned the borrowing by the U.D.C. of £2,000 for improving the market.

CARDIFF.—The Howard Gardens Secondary School is to be provided with a girl's gymnasium at an estimated cost of £1,200, and it has been decided to proceed with the alteration of the building as early as possible.

CHEADLE.—Plans passed: House, Outwood-road, for Mr. J. W. Allen; additions to White Hart Hotel, for Mr. W. H. Hacking; bank premises, High-street, for Messrs. Gotch & Saunders.

COSELEY.—The U.D.C. has sealed a contract with Messrs. A. & S. Wheater for the erection of working class dwellings in the district and approved of a mortgage with the Public Works Loan Commissioners for £33,240 for housing purposes.

CREWE.—The T.C. has decided to purchase Linden Grange, Crewe, a large residence with over 5 acres of land and gardens, as a maternity and child welfare centre.

DEWSBURY.—Plans passed: Camroyd Motor Co., Ltd., garage, Battye-street; Mr. J. Armitage, additions to house, Wakefield-road; M. Day, Ltd., shed, King's Mill, Mill-street East; Hemingway & Bindschadler, raising of chimney, Wilton-street; Yorkshire Butchers' Hide and Skin Co., Ltd., conversion of stable into garage, Mill-road; J. Simpson & Son, extension to pulley works, Camroyd-street; Mr. W. H. Spurr, garage, Caledonian-road; Dr. Hammerton, additions to "The Mount," Wakefield-road; M. Day, Ltd., dye-house, pulling place, shed, and stable, King's Mill, Mill-street East; and Hooper & Smith, garage, Foundry-street.

DOVER.—Plans passed: Eight houses, Whitfield-avenue, for Mr. W. Bromley.

DROITWICH.—The T.C. has accepted a site on which to build 40 houses from the Corbett trustees.

DRONSFIELD.—The U.D.C. is asking the Health Ministry for a £5,000 loan towards house-building costs.

ECCLES.—The Manchester Consistory Court has granted to the vicar and wardens of Eccles Parish Church a faculty to rebuild the south porch in the church as a memorial to the men of the parish who fell in the war.

GRIMSBY.—In connection with a scheme for facilitating the unloading of railway trucks in the highways yard, the T.C. has authorised the construction of six pairs of elevated bins or silos in ferro-concrete at an estimated cost of £3,200.——Plans have been passed for a fish meal factory, Ropery-street, for Messrs. Smethurst.

HACKNEY.—Plans passed: Workshop, 28 and 30, Hackney Grove, for Messrs. J. Hamilton & Son; additions 26, Churchill-road, for Messrs. Barrett & Power; laboratory, &c., 210, Mare-street, for Messrs. T. W. Kingsland & Son; sanitary improvements, Globe-road, for Messrs. H. Holmes & Co.; drainage, 2, 4, 6 and 8, Penpoll-road, for Messrs. Harris & Wardrop.

HAZEL GROVE AND BRAMHALL.—Plans passed: Brick bungalow, Albert-street, Hazell Grove, for Mr. W. Grundey; two brick bungalows, Linney-road, Bramhall, for Mr. H. Conrch; house, Jackson's-lane, Hazel Grove, for Mr. W. H. Bentley; house, Torkington-road, for Mr. W. Harding; house, Bosden Fold-road, for Mr. J. Entwisle.

HORNSEA.—Plans passed: Bungalow for Mr. Laybourn; bungalow for Mr. Hooper; house, for Mrs. Alexandra.

LAMBETH.—The B.C. is offering no objection to the proposal of the Surrey Cricket Club to construct a steel and concrete extension of the stand at Kennington Oval.

LOOE.—The U.D.C. has arranged with the local builder's association for the erection of eight houses.

MANCHESTER.—Plans for the new Art Gallery, which the City Council agreed at the October meeting in 1918 should be erected on the old Infirmary site, Piccadilly, will, it is hoped, be ready for public inspection at the end of next year.

RAWMARSH.—The U.D.C. is prepared to enter into a contract with Messrs. Hopkinson & Co., for the erection of a further 70 houses on the Dorman Long system, which, in addition to the 30 already decided upon, will complete the first 100 houses on the Haughroad site, approved by the Ministry of Health.

STANDISH.—Plans passed by U.D.C.: Bathroom and wash-house for Mr. Jas. Fairhurst, School-lane; and kitchen for Mr. John H. Farrimond, 12, Preston-road.

STALYBRIDGE.—The Housing Committee has decided to ask for tenders for the erection of 40 houses on vacant street-end plots in the Stokes-lane district. These houses are supplementary to the original scheme which provides for the erection of about 440 houses on three sites.

STRETFORD.—Plans passed by U.D.C.: Alterations to garage, The Hawthorns, Edge-lane, for Sir Thomas Robinson; eight houses, Upper Chorlton-road, for the Artistic Housing Co., Ltd.; house, Chester-road, for H. & J. Quick, Ltd.; conveniences, Gorse Hill Hotel, for Threlfalls Brewery Co., Ltd.; conversion of stables &c., to workshop, 389, City-road, for Mr. W. Irving; addition to office, First Avenue, for Ford Motor Co. (England), Ltd.; biscuit depot, Praed-road, for Macfarlane, Lang & Co., Ltd.; offices, Westinghouse-road, for Wm. Coackley & Co., Ltd.; offices and warehouse, Westinghouse-road, for Courtaulds, Ltd.

TIVERTON.—The T.C. has received sanction for a £22,000 loan (sixty years) for working-class dwellings. To provide work for unemployed during the winter it has been decided to proceed with the work of roads and sewers in connection with the Westexe housing site; also to outline a lay-out plan for 60 houses in that quarter of the town.

WOLVERHAMPTON.—Plans passed by T.C.: A. J. Parkes, garage, Parkdale; G. Edwards, additions to stabling, Lower Vauxhall; H. Willcock & Co., shed, Horsman-street; H. George, two dwelling houses, Penn road; H. J. Crawley, rebuild St. George's Hall, Garrick-street; Sunbeam Motor Car Co., Ltd., army hut, Upper Villiers-street; Mrs. E. Crewe, stable, Willenhall-road; H. E. Sproson, shed, Owen-road; W. S. Miller, bathroom, Richmond-road; J. Berrington, bungalow, Copthorne-road; G. R. Smithson & Son, two army huts, Cannock-road; M. J. Greenstone, alterations, Cleveland-road; G. Robbins, shed, Pelham-street; J. Williams, shed, Ettingshall-road; Atkinson's Brewery, Ltd., urinal, &c., "Chequer Ball," North-street; J. Nicholls & Son, shed, All Saints'-road; J. R. Summerfield, verandah, 9, Cleveland-road; Sunbeam Motor Car Co., Ltd., hangars, Sunbeam Works; B. L. Mulliner, motor house, 2, Stubbs-road; W. Redman & Co., Ltd., shed, Temple-street; W. Blakemore, motor shed, Clark-road; Frank Myatt, Ltd., motor shed, Raglan-street; F. Simcock, bread room, Pelham-street; Villiers Engineering Co., shed, Sunbeam-street.

FIRES.

ALYTH.—The Airlie Arms Hotel, Alyth, has been burnt to the ground. The proprietor is Mr. Peter Reid.

ASTON.—A fire has occurred at the works of John Yates & Co., edge tool manufacturers, of Rocky-lane.

COWES.—An alarming fire has occurred at Mornington Hall, Cowes, the residence of Sir James Marshall.

DOVER.—A disastrous fire has destroyed the residence of Admiral Sir Ernest Rice, Sibertswold-place, near Dover.

DUNOON.—A fire has occurred at Dalriada, Dunoon, the residence of Mr. P. F. Skelton, sheriff officer, Port Glasgow.

KELSO.—Considerable damage has been done by fire which broke out at the farm of Kaimflat, near Kelso, tenanted by Mr. Robert Graham, a well-known stockman.

KENDAL.—The factory of Messrs. Shepherd's handle-turning business has been destroyed by fire, the walls only being left standing. The damage is estimated at between £25,000 and £30,000.

MELKSHAM.—A fire has occurred at Melksham House, a fine old residential property, which was recently given by Major Fuller, of the Avon Rubber Works, as a club and recreation ground for employes of that undertaking.

NOTTINGHAM.—Great damage has been caused at Gambles' lace factory by fire, and also damage at Wright's Waggon building yard.

OLDHAM.—The ironworks of Messrs. Abel Lees, at Bardsley, between Oldham and Ashton, have been gutted by fire, the damage being estimated at £30,000.

PAISLEY.—Damage estimated at £5,000 has been caused by an outbreak of fire in Burnbank Chemical Works, Chain-road, Eldersle, occupied by Messrs. William Forrest & Sons.

TOTTENHAM.—Considerable damage was occasioned by a fire which broke out at the premises of Messrs. Thornborough & Co., High-road, Tottenham.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach him *not later than first post on Wednesday.*

* Denotes *accepted.* † Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modifications.*

ABERLOUR.—For the erection of double cottages at the Allachy site, also road making and fencing. Mr. J. Wittet, architect, Elgin:—

*Jas. Lawrence, Craigellachie (*Builder*)
*A. & R. Dunbar, Craigellachie (*Carpenter*).
*Chas. Fraser, Aberlour (*Slater*).
*Jas. Fyffe & Son, Aberlour (*Plumber*).
*J. Brodie & Son, Elgin (*Plasterer*).
*Wm. Macdonald, Aberlour (*Painter*).

ALFRETON.—For the erection of (*a*) 50 houses on Alfreton site, and (*b*) 20 houses on Swanwick site, for the U.D.C.:—

*(*a*) Evans Bros.....	£975 1 9	per house
*(*b*) G. H. Brentnall....	Do.	Do.

ASPATRIA.—For the erection of 60 houses for the U.D.C.:—

*W. Lattimer, Mealsgate—		
24 B Class, design No. 4..	£905 0 9	each
14 B Class, design No. 5 ..	935 10 2	,,
16 B Class, design No. 6 ..	872 17 4	,,
6 B Class, design No. 4 ..	984 5 10	,,
House drains and fencing..	1,922 1 6	
Road making and sewers..	2,184 2 0	

BARNSLEY.—For erection of 283 houses on the Huddersfield-road site, for the T.C.:—

*Wellerman Bros.....151 at £880 per house and 132 at £1,010 ,,

BATH.—For the extension of engine-room at electricity generating station for the T.C.:—

*J. Long & Sons £5,798

BELPER.—For the erection of 5 pairs of parlour type houses, with drainage, fencing, footpaths, &c., at Duffield. Mr. J. B. Mason, architect, Duffield:—

*Joseph Payne, Crich, nr. Matlock £9,521 6 8

COLWYN BAY.—For painting and decorating the Council Chamber, for the U.D.C.:—

*W. Hodgkins & Son, Colwyn Bay..... £102

DROITWICH.—For the erection of six houses at Wychbold Doddenhill, for the R.D.C. Messrs. Pritchard & Pritchard, architects, Kidderminster:—

*J. Brazier & Co., Ltd., Bromsgrove.. £5,340

GIRVAN.—For the erection of 60 houses, for the T.C.:—

*R. Loudon, Glasgow (*excavator brick, &c.*).....	£25,887
W. Paton & Son, Ayr (*carpenter and joiner*)	19,725
*W. A. Vass, Ayr (*plasterer*).....	3,893
*W. Auld & Sons, Ayr (*plumber*) ..	10,886
*Baillie & Telfer, Garnethill (*glazier*)	371
*W. Paterson, Girvan (*painter*) ..	2,143
*W. and H. Steel & W. Black, Girvan (*slater and roughcast*)	5,193

HARPENDEN.—For the construction of roads and sewers, for the U.D.C. Mr. John H. Leverton, surveyor. Quantities by surveyor:—

	Station-road Sewer.	Housing Site. Sewer and road
J. P. D. Dennis	£2,887 4 0..	£3,078 0 0
Roads & Public Works, Ltd.	1,023 14 6..	2,568 11 0
Harpenden Building Co.	942 14 6..	1,624 18 10
T. W. Pedrette	857 16 0..	1,370 7 0
C. W. Killingback	762 10 2..	1,397 2 6
W. Deamer	749 3 8..	1,238 3 11
E. C. Jarvis	702 19 0..	846 2 2
H. & R. Hall	700 9 0..	842 2 6
Surveyor's Estimate	750 0 0..	765 18 0

HOLMFIRTH.—Alterations to the Valley Theatre. Mr. P. N. Brown, architect, Holmfirth:—

*F. & J. F. Marsden, Holmfirth (*Bricklayer*).
*John Cooke, Huddersfield (*Concreter and fire proof floors*).
*Victor Haigh & Co., Holmfirth (*Carpenter and joiner*).
*W. H. Blake & Co., Sheffield (*Structural steelwork*).
*Ben Donkersley, Holmfirth (*Plumber*).
*John Bottomley, Hinchcliffe Mill (*Plasterer*).
*A. G. Cope, Liverpool (*Modelled plaster work*).
*D. Hinchliffe & Sons, Holmfirth (*Painter and decorator*).
*Keith & Blackman, London (*Ventilating appliances*).
*J. Shaw, Son & Co., Holmfirth (*Seating*).
*Chas. R. Tolson, Holmfirth (*Electrician*).

HOLMFIRTH.—For the erection of 12 pairs of semi-detached workmen's dwellings, and construction of roads, on the New Mill-road site, for the U.D.C.:—Mr. P. N. Brown, architect, Holmfirth:—

Laying-Out Site.

*G. H. Greasley, Leicester.

Erection of Houses.

*J. W. Pearson & Co., Milnsbridge (*Excavator, drainlayer, blocklayer and concreter*).
*Bailey & Wakefield, Holmfirth (*Carpenter and joiner*).
*W. E. Bailey, Huddersfield (*Plumber and glazier*).
*Pickles Bros., Horsforth (*Slater*).
*George Haigh, Thongsbridge (*Plasterer*).
*J. Quarmby & Son, Holmfirth (*Painter*).
*Chas. R. Tolson, Holmfirth (*Electrician*).

ILFRACOMBE.—For repainting the Victoria Pavilion, for the U.D.C. :—
*A. R. Price £335

ILFRACOMBE.—For recovering roof of West Bandstand, for the U.D.C. :—
*W. Curtis £215

LEIGHTON BUZZARD.—For the erection of 10 houses in Stanbridge-road, for the U.D.C. Mr. E. J. Saunders, Surveyor to U.D.C. Quantities by Ministry of Health :—

	Per pair.
D. Cook & Sons, Leighton Buzzard	£1,852 0 0
W. Elvey & Sons, Leagrave..	1,898 13 10
H. Lacey & Son, Luton.....	1,900 0 0
A. E. Sear, Leighton Buzzard	1,965 16 8
A. E. Dawson, Leighton Buzzard	1,968 1 8
Purser & Furlong, Leighton Buzzard	2,006 0 0

No tender yet accepted.

LONDON.—For re-creosoting old wood blocks, for the Westminster C.C. :—

	per 1,000 cub. ft.
*W. Christie & Co., Ltd.....	£90 0 0
Alex. Bruce & Co.	106 6 8
The Acme Flooring & Paving Co.	125 0 0

(1,000 cub. ft. are equivalent to about 16,000 8 in. × 4½ in. × 3 in. blocks.)

LONDON.—For the reinstatement of the footways and the laying of wood pavement at the portion of Ebury Bridge over the London, Brighton & South Coast Railway which is being reconstructed by the Railway Company, for the Westminster C.C. :—

*Acme Flooring & Paving Co. (1904), Ltd.....	£2,741 9 2
G. J. Anderson.....	2,770 0 0

LONDON.—The Westminster C.C. has accepted the tender of Alex. Thomson & Co., South Tottenham, for footway and channel (mason work) for the year ending December 31, 1921.

MOFFAT.—For the erection of houses, for the T.C. :—

*A. Schoolar, Wamphray (*mason*)	£3,124
*J. Hendry, Moffat (*carpenter and joiner*)	2,466
*P. Drummond, Moffat (*plumber*) ...	1,110
*W. B. Thomson, Moffat (*painter*) ..	197
*McKinnon & Son, Lockerbie (*slater*)	643
Pollock Bros., Annan (*plasterer*)	717
*Cunningham & Co., Edinburgh] (*glazier*	58

MORLEY.—For painting the walls, &c., of the Textile Laboratory, &c., for the Governors :—

*Brooksbank Bros., Morley.....	£59 15
Auty & Morley, Morley.....	65 0
Cookson & Son, Morley.....	66 0
H. Atkinson, Morley.....	75 0
G. Blakeley, Morley.....	132 0

PORTKNOCKIE.—For the erection of cottages at Admiralty-street, and road making and fencing for the T.C. Mr. J. Wittet, architect, Elgin :—
*J. A. McBoyle, Portknockie (*Builder*).
*Mackie & McKenzie, Elgin (*Carpenter*).
*Wm. Rumbles, Cullen (*Slater*).
*H. J. Watson, Banff (*Plumber*).
*Jas. Ingram, Cullen (*Plasterer*).
*W. McDonald, Portsay (*Painter*).

PORTSMOUTH.—For alterations and additions to Edgcombe House, for the E.C. Mr. A. J. Sharp, architect, Town Hall, Portsmouth :—

*Howe & Bishop, Southsea ..	£1,746 0 0
Tanner Bros, Southsea.....	2,008 0 0
J. Croad, Portsea.....	2,200 0 0
F. Corke, Southsea.....	2,279 0 0
Jones & Son, Southsea.....	2,373 0 0
E. Till, Southsea.....	2 570 1 4

THIRSK.—Erection of 14 houses at Sowerby, for the R.D.C. :—
*E. T. Small & Co., Rotherham..... £14,151

TOTNES.—For the erection of 24 houses and construction of sewers, &c., on the Steart's Estate, for the T.C. :—
*Wakeham Bros., Plymouth..Average cost £1,071 per house.

WEDNESBURY.—For repairs to houses in Trouse-lane, for the T.C. :—

*Hammond Bros., Darlaston	£197 0
Richard Hammond, Darlaston	216 0
J. Perry, Wednesbury	315 10

WIGSTON.—For the erection of houses, for the U.D.C. :—
*Moss and Son—£794 4s. 10d. each for six houses in Moat-street; £908 each for 18 parlour houses with a north aspect; and £920 each for eight similar houses with a south aspect on the Aylestone-lane site.

WIMBORNE.—For making up first section of road on Leigh housing site, for the U.D.C. :—
*Brixey, Parkstone..... £1,023 13

WOLVERHAMPTON.—For painting and decorating house at Blakeley Green, for the T.C. :—
*W. Gough £105

WOLVERHAMPTON.—For erection of 12 houses on Bilbrook Estate, for the T.C. :—
*Sir Robert McAlpine & Sons, London (approximately) £12,000

Forms of Contract.

The General Purposes Committee of the London County Council has recommended that in any future contracts entered into by the Council on the basis of a lump sum with an "up-and-down" clause, a stipulation be included (1) that any additional payments made to the contractor beyond those in respect of actual increases in the cost of labour and materials after the date of the tender shall be limited to actual out-of-pocket expenses reasonably incurred by him in relation to such increases, and (2) that in no circumstances shall any additional profit be allowed to him by reason thereof.

JAPANESE OAK
ALL THICKNESSES, from ½ in. to 3 in. sq. edged
SYDNEY PRIDAY
25, Monument Street, E.C.3
Telephone Nos.: AVENUE 667 & 4817

THE LONDON & LANCASHIRE INSURANCE Co LTD
Security - - - £9,304,732
FIRE.
CONSEQUENTIAL LOSS.
ACCIDENTS.
BURGLARY. PLATE GLASS
EMPLOYERS' LIABILITY.
MARINE.
Head Offices:
45, Dale Street, Liverpool.
155, Leadenhall Street, London, E.C.3.
Chief Administration:
5 & 7, Chancery Lane, London, W.C.2

IT PAYS
TO EMPLOY A BROKER FOR ALL INSURANCES.
SHERWELL'S NEPHEWS
Insurance Brokers,
8, QUEEN ST., LONDON, E.C.4.
Telephone No.: CITY 7482.

J. J. ETRIDGE, Jr. Ltd
SLATING AND TILING
SLATE MERCHANTS
CONTRACTORS.
Inspections and Reports made on
OLD OR FAULTY ROOFS
in any part of the country.
Telephone; Avenue 4948 (two lines), or write.
Bethnal Green Slate Works,
BETHNAL GREEN, LONDON, E.

War Memorials, Church Tablets, Celtic Crosses,
in Stone, Marble, or Granite. Designs Free.
MARBLE SHOPFITTINGS & STEPS
KELLY & CO.
(Gramb Bros.) Ltd.
129, Marylebone Road, N.W.1
Phone: "Padd. 5518."

OGILVIE & CO., Telephone: DALSTON 1268
Many years connected with the late firm of W. H. Lascelles & Co., of Bunhill Row.
Mildmay Works, Mildmay Avenue, Islington, N.
EXPERTS IN HIGH-CLASS JOINERY.
ALTERATIONS AND DECORATIONS. ESTIMATES FREE.

ALLAN TAYLOR & Co.
126-128, HIGH ST., WANDSWORTH, S.W.18
AUTOMOBILE ENGINEERS.
ADVISORY CONSULTANTS TO THE TRADE.
COMMERCIAL VEHICLES: 15 cwt. to 5 tons. Any Type.
PLEASURE CARS: Wide Range to choose from.
TRAVELLERS CARS A SPECIALITY.
Terms: Cash or Credit.
Expert advice on all matters pertaining to things MOTOR.
RING PUTNEY 1698

HOWELL J. WILLIAMS Ltd
Builders
High-Class Building and Joinery Work
11/17, BERMONDSEY STREET, LONDON BRIDGE, S.E.1.
Telephone: HOP 202
Builders of very many well-known Banks, Office and Business premises. Our works especially convenient for City Building and fittings.